

POCKET TOOL GUIDE NO. 50

REVISED JANUARY, 1954



**FOR LINEMEN
ELECTRICIANS
MECHANICS**

KLEIN TOOLS

Mathias KLEIN & Sons
Established 1857

Chicago, Ill., U.S.A.

7200 McCORMICK ROAD, CHICAGO 45, ILLINOIS

MATHIAS KLEIN & SONS

MANUFACTURERS OF
TOOLS FOR
LINEMEN
ELECTRICIANS
MECHANICS

POCKET TOOL GUIDE NO. 50



GENERAL OFFICES AND FACTORY

7200 McCORMICK ROAD, CHICAGO 45, ILLINOIS

In comparison with modern mass production, Klein's individual methods might be considered extravagant. However, Klein quality is the direct result of these methods, and Klein tools could not be produced other than in the Klein way.

Klein tools are admittedly the finest today as they have been "Since 1857." They have been widely imitated. Insist on the genuine. Look for the Klein trade-mark.

To avoid substitution of inferior imitations (of which there are many), we wish to caution purchasers that tools marked simply with the words "Klein Pattern," or with the word "Klein" alone, are not of our manufacture. Genuine Klein Tools are stamped either with the full firm name, "Mathias Klein & Sons," or with the name "M. Klein & Sons," or with the Klein trade-mark.



PRINTED IN U.S.A.

SERVING THE ELECTRICAL INDUSTRY

"SINCE 1857"



When Mathias Klein opened his little forge shop in 1857, Chicago was but a village on the American frontier. The Electrical Industry was taking its first uncertain steps with the coming of the telegraph. Since there were no adequate tools for the early linemen to use, they improvised as best they could.

As construction crews moved westward, bringing speedy communication to the outlying towns, some of the workmen heard of the reputation Mathias Klein had won for his skill and high quality workmanship.

At their suggestion, he designed and forged a sturdy plier to meet the special needs of line construction work—so a new industry was born.

By word of mouth information was passed along that at Mathias Klein's Forge Shop you could buy tools which would give better performance, last longer, and result in more general satisfaction.

Business grew; and as the telephone followed the telegraph, as power lines opened up new

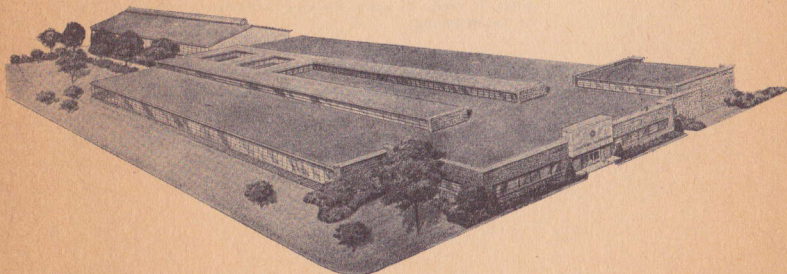
possibilities to industry, as railways expanded, the demand for Klein quality tools continued to grow.

Telephone switchboard work needed long nose pliers—"ask Klein."
Stranded cable required improved grips—"Klein can make them."

"Safety First" became the order of the day—"order climbers, belts and safety straps from Klein."

And so the call went for more highly specialized and better equipment for all types of electrical work.

If the success of Mathias Klein & Sons' development can be described in one word, that word is "quality." This is as true today as it was almost a century ago when the company was founded. The knowledge and experience that Klein has acquired over the years assure that Klein products are properly designed for the jobs they are intended to do—that Klein products have the quality and stamina to stand up under tough day-in, day-out service.





IMPORTANT

Shipments in Transit

When goods are delivered to carrier and a receipt is given our responsibility ceases. The carrier is then responsible for safe delivery.

Claims

All claims for shortage, error, non-delivery, etc., must be made within ten days of invoice date.

Replacing of Defective Goods

We use all possible care in the manufacture of our goods and will not send out anything that we know is defective. It sometimes happens that a defect cannot be detected and only shows up when a tool is put to use. In case of such a defect we wish to make it good, but we insist on the article being sent to us for examination. If we find the claim substantiated we will gladly make replacement, but we cannot be expected to replace tools broken by misuse or accident. In no case will replacement be made of tools showing evidence of grinding, filing or re-tempering.

Be sure to print in ink your full name and address on all returned packages and address package to

MATHIAS KLEIN & SONS, CLAIM DEPT.
7200 McCormick Road
Chicago 45, Illinois



SAFETY-FIRST RULES

SUGGESTIONS FOR ACCIDENT PREVENTION AT MANHOLES

1. Watch your lift when raising and lowering manhole cover.
2. Be sure cover is placed in line with hole and at that side which is farthest from the direction of traffic.
3. Be sure to place manhole guard and flag properly—and use ladder.
4. Before entering manhole determine first whether or not it is gassy. In doubtful cases always wear Klein safety harness.
5. Make sure open flames, lighted cigars, cigarettes or pipes are not carried into manholes.
6. Clean out all clippings and junk from manhole.
7. Before lighting furnace or blow torch, inspect them to see that all parts are in good order and that all threaded joints are tight.
8. Make sure that paraffin or metal is kept at least fifteen feet from manhole while heating.
9. Make sure your Safety First Furnace Shield is properly placed while heating paraffin and metal.
10. Do not lower pots in manhole unless all is clear.
11. Do not leave tools near manhole opening.
12. Do not leave dipper or ladle in pots when passing same to splicer.
13. Do not heat paraffin or metal under tent when placed less than fifteen feet from manhole.
14. Be careful when replacing manhole cover.
15. Always clean up around manhole when finished.
16. When leaving the work at night, be sure that lantern is left burning and locked to cart.

SUGGESTIONS FOR ACCIDENT PREVENTION

Be careful in dismantling that the pole is not only side guyed, but also guyed with the lead.

Be careful if telephone cables are strung over tight leads—a little precaution is worth months of regret.

Be sure you put your tools securely into your belt after you have finished using them. Hundreds of accidents are caused every year by tools dropped on helpers and on people passing by.

Do not take chances. Fasten your safety strap securely around the pole. Saving a minute by passing your strap over the top of a pin may mean years of waiting till you recover from a broken back.

Be sure the guy ropes to your platforms are tied securely and out of the way of traffic. Carelessness by someone on the ground may mean a dumping for you.

Watch your hand line. More than one bad shock has resulted from its contact with a power lead.

Do not try to melt paraffin on a platform. A fire on a platform is about as comfortable as on a ship at sea.

Do not use broken tools.

In cutting down old leads, be sure that the pole will hold you and that it is well guyed before you cut all the wires.

FIRST AID TO CHECK BLEEDING

Arterial Bleeding—Blood is bright red and comes in spurts. Send for a surgeon, lay the patient flat and elevate the limb or bleeding part. Apply pressure directly to the bleeding area or along the course of the artery and between the wound and the heart. Cover your hand with sterilized gauze and apply pressure until a pad or compressor may be substituted and bound on.

In applying a pad or compressor, fill the wound with sterilized gauze. Do not leave a tight bandage on for too long a period of time.

Veinous Bleeding—Blood is purple or dark in color and does not come in spurts. Elevate the area of the wound and remove any tight clothing between the wound and the heart. Apply pressure directly to the wound.

Capillary Bleeding—Oozing. Apply a bandage directly to the wound. Use hot or cold applications.

First Aid for bleeding should only stop when the bleeding has stopped and the wound has been covered. At that time, a surgeon should be consulted. Never give stimulants until bleeding has stopped.

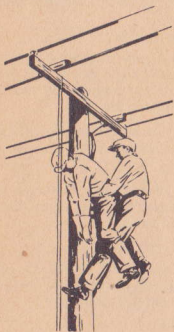


POLE-TOP RESUSCITATION

When artificial respiration is required, it should be administered at the earliest possible moment. Therefore, pole-top resuscitation is recommended. The following procedure is the one which will be applicable in most cases.

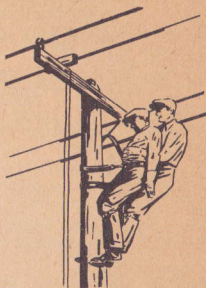
1. The first person to reach the victim should clear him from the electrical contact, letting him hang along side the pole from his safety strap. Rubber gloves should be used or other precautions should be taken.

2. To administer artificial respiration, the rescuer should work his way up to a position where one of the victim's legs is between those of the rescuer. (See Fig. 1) The victim's safety strap should remain around the pole until he is to be lowered.



3. If possible, the victim's mouth should be cleared of foreign substances and his tongue pulled forward.

4. The rescuer should encircle, with his arms, the waist of the victim, placing both hands on the abdomen with thumbs below the lower ribs and fingers touching. (See Fig. 2)



5. With his arms and hands, the rescuer then compresses the victim's abdomen in an upward motion. At the finish of the stroke, the hands are cupped with the fingers depressing the abdomen under the breast bone. The pressure is then quickly released and then reapplied at a frequency of 12 to 15 times per minute.

6. After the victim revives, the rescuer should retain him in position and under control. Artificial respiration should be resumed if the victim stops breathing again.

7. While the foregoing is in progress, additional workmen should arrange rope rigging on the structure and secure the victim to the lowering line.

8. A lowering line of sufficient strength is first passed over a cross arm. It is then passed under the victim's arms and fastened securely, preferably in front by at least three half hitches. The line may also be secured to the "D" rings of the victim's belt.

9. When reaching the ground, the victim should be laid on the ground and if necessary, administered artificial respiration by the prone pressure method, as described on page 7.

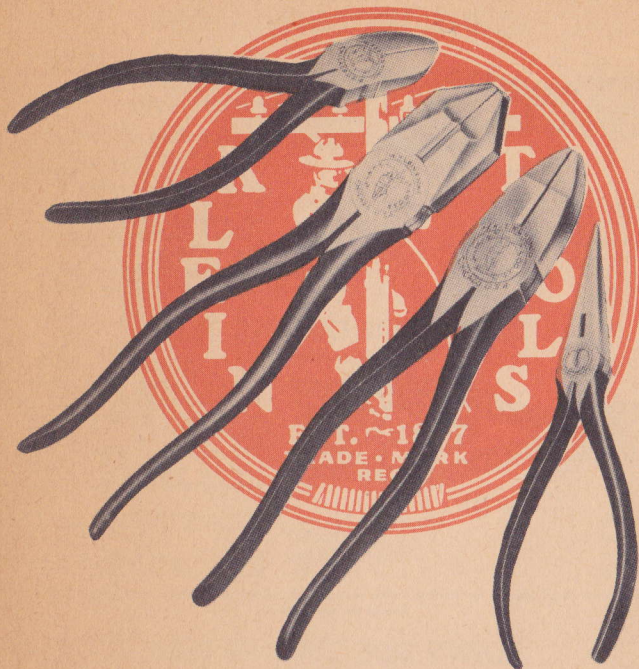
10. Medical aid should be summoned as soon as possible.

(Condensed from Data Sheet D-PU-1 of National Safety Council Based on "Pole Top Resuscitation" prepared by Accident Prevention Committee, Edison Electric Institute).

Safety Rules Continued on Pages 86 and 87

"EVERY LINEMAN A KLEINMAN"

KLEIN PLIERS



All Klein Pliers are hammer forged from high grade tool steel made specially to our analysis.

Every plier is individually fitted, tempered, adjusted and tested. (The test in every case being far in excess of any pressure that could be applied by hand).

Due to their long lasting qualities, Klein Pliers are an established standard in the electrical industry and have equal acceptance

with the men on steel construction and re-inforced concrete work.

In general manufacturing wherever Klein Pliers are used Klein Quality is relied upon to increase production and reduce cost.

We guarantee all Klein Tools against defects in material or workmanship (see page 5), but this does not mean they are indestructible. When properly used, Klein Tools will give years of service.

A few drops of light oil at the hinge now and then will keep your pliers working smoothly and prevent undue wear.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S SIDE CUTTING PLIER



No. 201

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
201-5	5-inch	3 lbs.
201-6	6-inch	5 $\frac{1}{4}$ lbs.
201-7	7-inch	7 $\frac{1}{4}$ lbs.
201-8	8-inch	11 $\frac{3}{4}$ lbs.
201-9	9-inch	14 lbs.

For use on bare and insulated wire. For linemen, electricians and mechanics. Adaptable for all uses where a high quality plier of this type is required.

Genuine Klein Linemen's Side Cutting Plier is one of the most popular pliers in use today. Its handles are shaped to the curvature of the hand, a much desired feature. Powerful leverage and keen reinforced cutting knives make this plier adaptable for heavy cutting.

Full clearance back of the knife permits use on insulated wire.

KLEIN'S SIDE CUTTING PLIER

With Sleeve-Joint Twister



No. 212

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
*212-6	6-inch	5 $\frac{1}{4}$ lbs.
*212-7	7-inch	7 $\frac{1}{4}$ lbs.
*212-8	8-inch	11 $\frac{3}{4}$ lbs.

For use on bare and insulated wire. For linemen and electricians. Specially designed for telegraph and telephone work.

This plier is the same as No. 201 series, but with opening provided for twisting double tube sleeve joints.

*Sleeve opening in 6" and 7" pliers for Nos. 14 and 17 N.B.S. and No. 12 B. & S. (.045.)

*Sleeve opening in 8" pliers for No. 12 N.B.S. and No. 10 B. & S. (.104.)

(This series of pliers can be modified with meter seal instead of sleeve openings to order only.)

Prices on application.

KLEIN'S SIDE CUTTING PLIER

N.E. Type ("Stream-lined")



No. 201-N.E.

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
201-5 N.E.	5-inch	3 lbs.
201-6 N.E.	6-inch	5 $\frac{1}{4}$ lbs.
201-7 N.E.	7-inch	7 $\frac{1}{4}$ lbs.
201-8 N.E.	8-inch	11 $\frac{3}{4}$ lbs.
201-9 N.E.	9-inch	13 $\frac{1}{2}$ lbs.

For use on bare and insulated wire. For linemen, electricians and mechanics. Adaptable for all uses where a high quality plier of this type is required.

These pliers are identical with Series 201 except that the nose is round to permit working in confined space and all edges are rounded to prevent nicking of wire.

Full clearance back of the knife permits use on insulated wire.

All Pliers, Polished Heads and Handles Temper Blue. Standard Package 6 in a box.

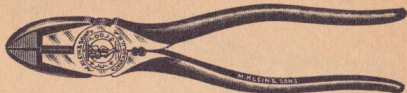
"EVERY LINEMAN A KLEINMAN"



KLEIN'S SIDE CUTTING PLIER

N.E. Type ("Streamlined") With Sleeve-Joint Twister

These pliers are identical with Series 201-N.E. but have opening provided for twisting double tube sleeve joints.



No. 212-N.E.

*Sleeve opening in 6" and 7" pliers for Nos. 14 and 17 N.B.S. and No. 12 B. & S. (.045.)

*Sleeve opening in 8" pliers for No. 12 N.B.S. and No. 10 B. & S. (.104.)

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
*212-6 N.E.	6-inch	5 1/4 lbs.
*212-7 N.E.	7-inch	7 1/4 lbs.
*212-8 N.E.	8-inch	11 3/4 lbs.

(This series of pliers can be modified with meter seal instead of sleeve openings to order only.)

Prices on application.

KLEIN'S CO-AXIAL CUTTER

A special tool is required to cut co-axial tubes properly. This cutter operates on the shear principle. A convex blade shears against a straight blade, leaving a clean cut with ends of tubes slightly flattened. This prevents unwinding of the stainless steel shielding tape.

Both .375" O. D. and .270" O. D. tubes are accommodated.

The cutter blades are replaceable when necessary.



No. 047

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
047	8 3/4-inch	12 3/4 lbs.

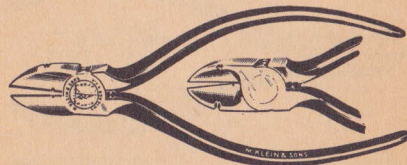
047K Pair Extra Knives for Co-Axial Cutter

KLEIN'S OBLIQUE CUTTING PLIER

With "W" Stripping Notches, Sleeve Openings and Skinning Hole
(Bell System Type)

This plier is similar to, but of heavier construction than, the 202-5-SW, an all purpose cutting tool for telephone installation and maintenance work. The "W" notches will slit acetate cellulose and other insulations from wires up to .058 O.D. A stripping hole .052 diameter is provided in blades. Sleeve openings in handles.

The 252-6 is the same plier less stripping hole, W skinning notch and sleeve opening.



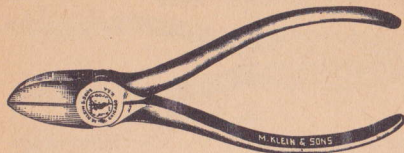
No. 252-SW

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
252-6-SW	6 inch	4 lbs.
252-6	6 inch	4 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.



KLEIN'S NARROW NOSED OBLIQUE CUTTING PLIER



No. 202

CAT. No. SIZE

202-5 5-inch

202-6 6-inch

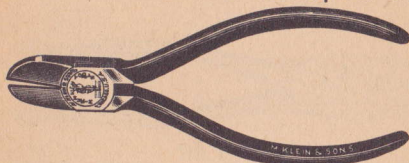
AV. WEIGHT PER DOZ.

3 3/4 lbs.

4 lbs.

Electricians, telephone men and switchboard builders will find this particular oblique cutting plier one of the most useful tools in their kits. Cuts close, the narrow head permitting its use in confined places. The knives are perfectly fitted, so that they meet accurately at all points.

KLEIN'S OBLIQUE CUTTING PLIER



No. 245

CAT. No. SIZE

245-5 5-inch

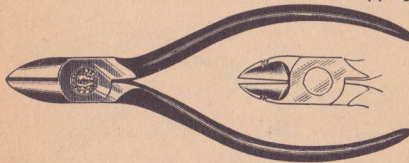
AV. WEIGHT PER DOZ.

3 lbs.

This plier measures exactly 5 inches in length. It is slightly smaller in all dimensions than the 202-5 and will be found particularly convenient as it can easily be carried in vest pocket. For electricians, telephone men and switchboard builders.

KLEIN'S OBLIQUE CUTTING PLIER

With "W" Stripping Notches



No. 245-W

CAT. No. SIZE

245-5-W 5-inch

AV. WEIGHT PER DOZ.

3 lbs.

This tool has two "W" shaped notches at back of the cutting knives. Specially designed for removing acetate cellulose insulation from .050 and .058 wires used on telephone distributing frames, etc.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

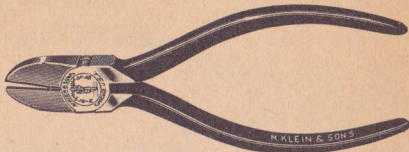
" EVERY LINEMAN A KLEINMAN "



KLEIN'S OBLIQUE CUTTING PLIER

With Wire Stripping Notch

This plier is identical with the No. 202 series with the addition of a notch in the cutting knives for stripping small wires. The notch is placed 3/16 inch from hinge and has diameter of .052 inch and can be used for "crimping" single tube copper sleeves as described under No. 240-S.



No. 240

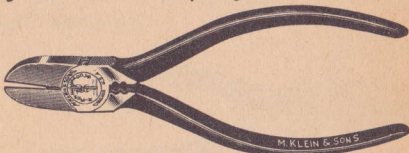
CAT. No.	SIZE	AV. WEIGHT PER DOZ.
240-5	5-inch	3 3/4 lbs.
240-6	6-inch	4 lbs.

KLEIN'S OBLIQUE CUTTING PLIER

With Wire Stripping Notch and Sleeve Openings

This plier is same as 202 series but with addition of stripping notch and openings for twisting sleeves. Made in one size only.

Another use for the notch is that it provides a means for "crimping" on .032—.025 single tube copper sleeves often used in telephone work for splicing .032 bridle wire and .025 inside wire.



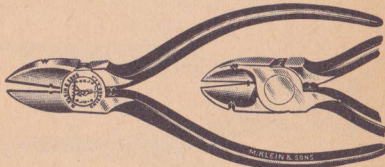
No. 240-S

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
240-5-S	5-inch	3 3/4 lbs.

KLEIN'S OBLIQUE CUTTING PLIER

With "W" Stripping Notches, Sleeve Openings and Skinning Hole

This plier is the all-purpose cutting tool for telephone installation and maintenance work. The "W" notches will slit acetate cellulose and other insulations from wires up to .058 O.D. A stripping hole .052 diameter is provided in blades. Sleeve openings in handles.



No. 202-SW

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
202-5-SW	5 1/2-inch	3 3/4 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S OBLIQUE CUTTING PLIER

Heavy Duty Pattern



No. 242

CAT. No. SIZE

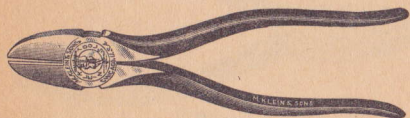
242-6 6-inch 4 1/4 lbs.

AV. WEIGHT PER DOZ.

This plier is similar in construction to the No. 202 that has been a favorite with mechanics for many years. It is, however, made heavier to meet the requirements of those desiring a stronger plier for general work. It will be found particularly useful where it is not necessary to reach into closely confined spaces.

KLEIN'S "AUTO" OBLIQUE CUTTING PLIER

"Handform" Handles



No. 220

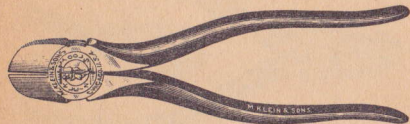
CAT. No. SIZE

220-7 7-inch 7 lbs.

AV. WEIGHT PER DOZ.

Made especially for mechanics and others who demand a high quality plier of this pattern. The knives are close cutting and carefully matched for their full length. Useful for pulling cotter pins, for choke wires, etc. The "Handform" handles provide full leverage and comfort for continual use.

KLEIN'S HEAVY CUTTING OBLIQUE PLIER



No. 220-7SN

CAT. No. SIZE

220-7SN 7-inch 6 lbs.

AV. WEIGHT PER DOZ.

Similar to No. 220-7 above, but made with 5/8 in. jaw for ease in heavier cutting work. This short nosed plier is particularly useful in cutting old tie wires on dismantling jobs. Also for cutting Neoprene covered drop wire.

All Pliers, Polished Heads and Handles Temper Blue'd. Standard Package 6 in a box.

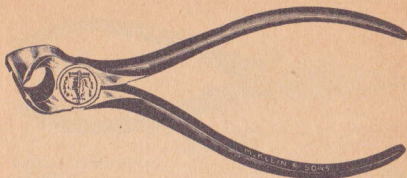
" EVERY LINEMAN A KLEINMAN "



KLEIN'S END CUTTING PLIER

A generally useful end cutting plier for electrical mechanics. Has stout jaws and broad cutting knives. There is ample room in the throat of pliers when needed. Frequently used for enclosed work which cannot be reached with the oblique type of cutter.

*The 7" size has "handform" handles as used on our side cutting pliers.



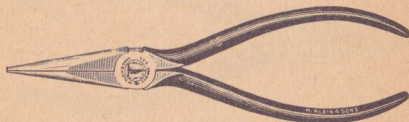
No. 232

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
232-5 1/2	5 1/2-inch	3 1/4 lbs.
*232-7	7-inch	7 1/2 lbs.

KLEIN'S LONG NOSE PLIER, WITHOUT CUTTERS

This style of plier has been perfected to meet a long-felt want of the electrician and general mechanic. Special features are its adaptability to stripping the ends of insulated wire and the extra long reach of the jaws which permits getting into difficult places. For switchboard, telegraph and telephone work, armature winding, etc. This tool is especially hardened and tempered to insure positive grip at point of nose when pressure is applied. Point 3/32 in. round.

*This plier has extra long nose—measuring 2 3/4" from center of hinge to point.



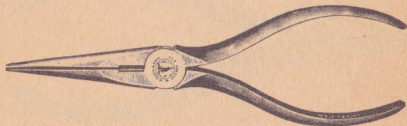
No. 301

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
301-5	5-inch	3 1/4 lbs.
301-6	6-inch	3 3/4 lbs.
*301-7	7-inch	4 1/4 lbs.

NOTE: No. 301 series supersedes former No. 316 series (Bell System Type).

KLEIN'S LONG NOSE, SIDE CUTTING PLIER

Has the same features as No. 301 series shown above, with the addition of the cutting knives. The knives are carefully fitted and the body of the plier is hardened and tempered, assuring true cutting. Point 3/32 in. round.



No. 203

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
203-5	5-inch	3 1/4 lbs.
203-6	6-inch	3 3/4 lbs.
*203-7	7-inch	4 1/4 lbs.

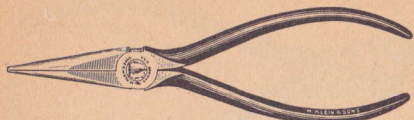
*This plier has extra long nose—measuring 2 3/4" from center of hinge to point.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S LONG NEEDLE NOSE PLIER



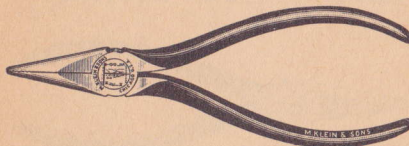
No. 303

CAT. No. SIZE
303-6 6-inch

AV. WEIGHT PER DOZ.
3 3/4 lbs.

This tool has all the features of No. 301 series, with the exception that the points of the nose are of the needle point pattern, which some mechanics prefer. The thin points make these pliers more useful for the general class of work done in Central Offices. Point 1/16 in. round.

KLEIN'S CHAIN NOSE PLIER, WITHOUT CUTTERS



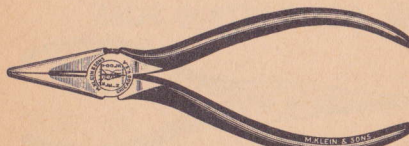
No. 317

CAT. No. SIZE
317-6 6-inch

AV. WEIGHT PER DOZ.
3 1/2 lbs.

This plier is intended for general use where a shorter nose is desirable. Made in one size only—6 inch.

KLEIN'S CHAIN NOSE PLIER, SIDE CUTTING



No. 217

CAT. No. SIZE
217-6 6-inch

AV. WEIGHT PER DOZ.
3 1/2 lbs.

A chain nose plier similar to No. 317-6 but with side cutting knives. The knives are carefully matched and cut true over their entire length. Made in one size only—6 inch.

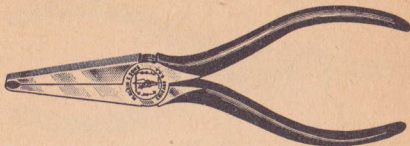
All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S HEAT-COIL PLIER

Particularly adapted for the removing of heat coils from switchboards and telephone terminals, the nose being shaped to fit the coils. This tool is also serviceable in removing caps from batteries or from binding posts, as well as holding any cylindrical object.



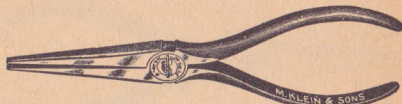
No. 313

CAT. No. SIZE
313-6 6-inch

AV. WEIGHT PER DOZ.
3 3/4 lbs.

KLEIN'S LONG FLAT NOSE PLIER

Extra long wide flat nose makes this an especially useful plier. This plier is hardened and tempered, so that the jaw will not spring when pressure is applied. This tool is adaptable to switchboard work, telephone and telegraph work, armature winding, etc. A very handy tool for spring adjusting. This plier can be supplied with inside of jaws left smooth if desired.



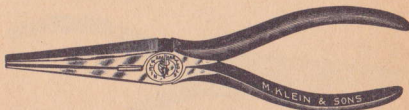
No. 305

CAT. No. SIZE
305-6 6-inch

AV. WEIGHT PER DOZ.
3 1/2 lbs.

KLEIN'S LONG FLAT NOSE, SIDE CUTTING PLIER

This plier is similar in its usefulness to No. 305 series with the added advantage of cutting knives.



No. 206

CAT. No. SIZE
206-6 6-inch

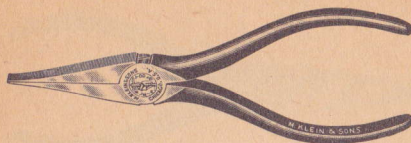
AV. WEIGHT PER DOZ.
3 1/2 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S LONG FLAT NOSE, SPRING ADJUSTING PLIER

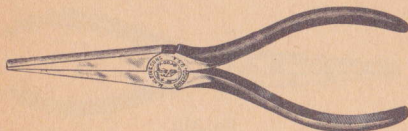


No. 311*

CAT. No. SIZE	AV. WEIGHT PER DOZ.
311-5 1/2 5 1/2-inch	3 1/4 lbs.

This plier is hollow ground on the outside of the jaws to reach between and grasp springs easily. It is largely used by telephone men because it makes rapid and accurate adjustments possible. Inside of jaws smooth.

KLEIN'S LONG DUCK BILL PLIER

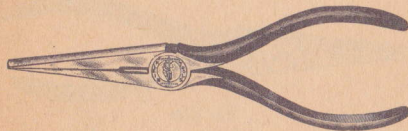


No. 304

CAT. No. SIZE	AV. WEIGHT PER DOZ.
304-6 6-inch	3 1/2 lbs.

This plier is fitted with duck bill jaws wider and heavier than those of the ordinary flat nose plier. This affords a tool with a firmer gripping surface. Also in general use as a weaver's plier. Jaws are smooth on inside.

KLEIN'S LONG DUCK BILL, SIDE CUTTING PLIER



No. 205

CAT. No. SIZE	AV. WEIGHT PER DOZ.
205-6 6-inch	3 1/4 lbs.

This type is the same as No. 304 duck bill, with the addition of cutting knives. As on all Klein Pliers, the cutters are carefully fitted so as to cut easily and true.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S LONG CURVED NOSE PLIER

A handy plier for working around switchboards, terminals and telephones, due to the nose being curved. The angle is arranged to give full clearance and prevent skinning of knuckles. Users will find this tool adaptable to a great variety of uses. The jaws will not lose their shape or set due to pressure applied, owing to the quality of steel used, its hardening and tempering.



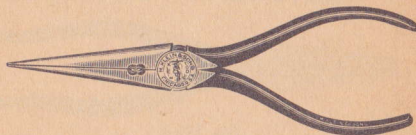
No. 302

CAT. No. SIZE	AV. WEIGHT PER DOZ.
302-6 6-inch	3 1/4 lbs.

KLEIN'S LONG NOSE SLEEVE PLIER

(Bell System Type)

This plier is identical with No. 301-6 but with the addition of sleeve openings for twisting No. 17 N.B.S. and smaller copper sleeves. Particularly useful for telephone work. Point 3/32 in. round.

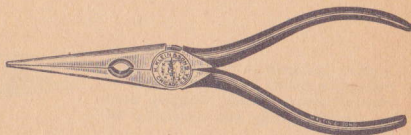


No. 316-S

CAT. No. SIZE	AV. WEIGHT PER DOZ.
316-S 6-inch	3 3/4 lbs.

KLEIN'S LONG NOSE CORD CRIMPING PLIER

This plier is same as 301-6 with addition of an oval groove for crimping telephone cords. A great convenience in telephone switchboard work. Point 3/32 in. round.



No. 301-C

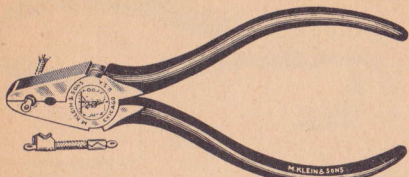
CAT. No. SIZE	AV. WEIGHT PER DOZ.
301-C 6-inch	3 3/4 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S CORD TIP CLOSING PLIER



No. 039

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
039	5-inch	3 lbs.

The jaws of this tool are sturdy, permitting its use as a hand press for closing cord tips such as W. E. 101 and 102 (new numbers 120 and 121). The circular openings are correctly sized to insure perfect connections when the press is completed. The diameters of the holes are .128" and .156" respectively.

KLEIN'S HEAVY DUTY LONG NOSE CUTTING PLIER



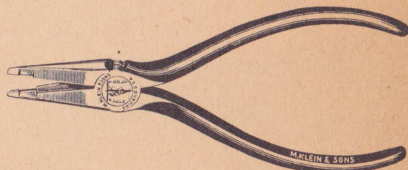
No. 203-8

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
203-8	8-inch	8 lbs.
203-8N	8-inch	8 lbs.

A long round nose cutting plier for heavier gauge wires as used on elevator control boards, etc. The round nose $2\frac{3}{4}$ in. long is for forming loops. A flat space ahead of the knife holds objects securely, will also "crack" insulation conveniently. The "hand-form" shaped handles afford maximum comfort and powerful leverage. 203-8N furnished with stripping notch for #12 B. & S. insulated wire.

(With $\frac{1}{4}$ " Knife at Point)

A plier designed to provide for light cutting in spaces beyond the reach of regular cutting pliers. Largely used in manufacturing and servicing of radio sets.



No. 301-6P

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
301-6P	6-inch	4 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

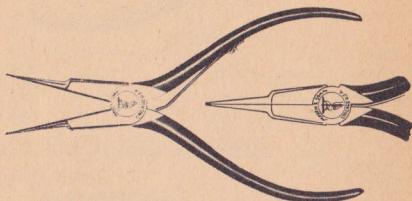
" EVERY LINEMAN A KLEINMAN "



The following pliers fitted with spring opening handles are special patterns for bench work on radio sets, radio tubes, switchboards, distributing frames and other production work for which they may be suited. The springs fitted serve to keep pliers open in position ready for immediate use without the necessity of opening up by hand—a time saver and convenience. These pliers may be furnished with either LEAF SPRINGS or VOLUTE SPRINGS.

KLEIN'S SPECIAL NEEDLE NOSE PLIER

This plier is specially designed to reach into confined areas. Tip of nose measures $\frac{1}{8}$ ". Nose of plier specially tempered to prevent distortion.

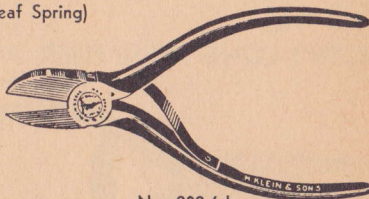


CAT. No.		AV. WEIGHT PER DOZ.
301-6-SCP	Without Cutter	3 $\frac{1}{4}$ lb.
301-6-SCP-L	Without Cutter, with Leaf Spring	3 $\frac{1}{4}$ lb.
203-6-SCP	With Cutter	3 $\frac{1}{4}$ lb.
203-6-SCP-L	With Cutter, with Leaf Spring	3 $\frac{1}{4}$ lb.

KLEIN'S OBLIQUE CUTTING PLIER

(Leaf Spring)

Generally used in production, repair and maintenance departments. Springs are replaceable and lock into correct position.



No. 202-6-L

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
245-5-L	5-inch	3 lbs.
202-5-L	5-inch	3 $\frac{3}{4}$ lbs.
202-6-L	6-inch	3 lbs.

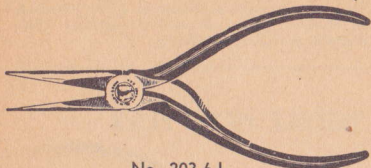
All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S LONG NOSE PLIER

(Leaf Spring)



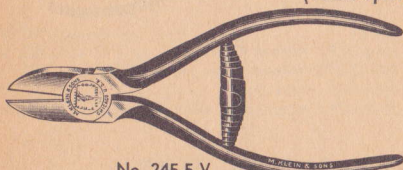
Generally used in production, repair and maintenance departments. Springs are replaceable and lock into correct position.

No. 203-6-L

CAT. No.	SIZE	AV. WT PER DOZ.	CAT. No.	SIZE	AV. WT PER DOZ.
203-5-L	5-inch with cutter . . .	3 1/4 lbs.	301-5-L	5-inch without cutter . . .	3 1/4 lbs.
203-6-L	6-inch with cutter . . .	3 3/4 lbs.	301-6-L	6-inch without cutter . . .	3 3/4 lbs.
203-7-L	7-inch with cutter . . .	4 lbs.	301-6-P-L	6-inch cutter at point . . .	3 3/4 lbs.
			301-7-L	7-inch without cutter . . .	4 lbs.

KLEIN'S OBLIQUE CUTTING PLIER

(Volute Spring)



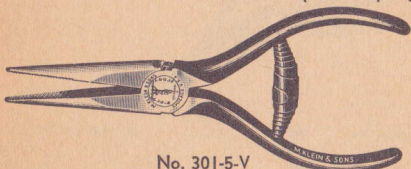
This is the regular 245-5 and 202-5 plier, but fitted with volute spring for cutting in general bench production work.

No. 245-5-V

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
245-5-V	5-inch	3 lbs.
202-5-V	5-inch	4 lbs.

KLEIN'S LONG NOSE PLIER, WITHOUT CUTTING KNIVES

(Volute Spring)



For bench work where a plain long nose plier is required. The spring keeps plier open at position ready for immediate use. Furnished with or without cutters.

No. 301-5-V

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
301-5-V	5-inch without cutters	3 1/2 lbs.
301-6-V	6-inch without cutters	4 lbs.
301-6-VP	6-inch with cutters at tip	4 lbs.
203-5-V	5-inch with cutters	3 1/2 lbs.
203-6-V	6-inch with cutters	4 lbs.

All Pliers, Polished Heads and Handles Temper Blued. Standard Package 6 in a box.

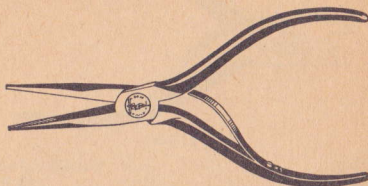
" EVERY LINEMAN A KLEINMAN "



NEWEST ADDITIONS TO THE KLEIN QUALITY LINE
Specially Designed to Meet the Demands of the Electronics Industry

LONG NOSE PLIER

Newly designed slim pattern long nose plier suitable for working in confined places. Jaws are knurled to insure a positive grip.

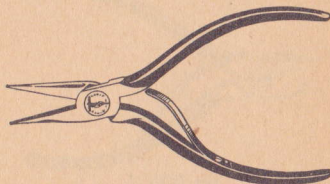


No. 307-5 $\frac{1}{2}$ -L

CAT. NO.	SIZE	WEIGHT PER DOZ.
307-5 $\frac{1}{2}$ -L	5 $\frac{1}{2}$ -inch	2 $\frac{1}{2}$ lbs.
307-5 $\frac{1}{2}$ (less leaf spring)	5 $\frac{1}{2}$ -inch	2 $\frac{1}{2}$ lbs.

CHAIN NOSE PLIER

Suitable for all types of close-quarter precision work—a full inch smaller than standard Klein Chain Nose Plier. Furnished with a very fine knurl that will not damage soft wire. Can be furnished less knurl to order.

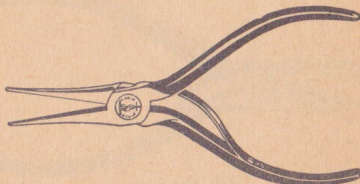


No. 317-5-L

CAT. NO.	SIZE	WEIGHT PER DOZ.
317-5-L	5-inch	2 $\frac{1}{2}$ lbs.
317-5 (less leaf spring)	5-inch	2 $\frac{1}{2}$ lbs.

DUCK BILL PLIER

Here is a new small plier with duck bill jaws of sufficient width to hold small springs, yet small enough to form wire in confined places. This plier is furnished without knurl.



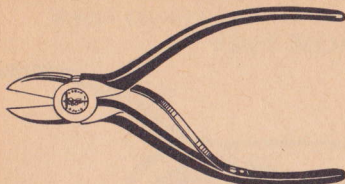
No. 306-5 $\frac{1}{2}$ -L

CAT. NO.	SIZE	WEIGHT PER DOZ.
306-5 $\frac{1}{2}$ -L	5 $\frac{1}{2}$ -inch	2 $\frac{1}{2}$ lbs.
306-5 $\frac{1}{2}$ (less leaf spring)	5 $\frac{1}{2}$ -inch	2 $\frac{1}{2}$ lbs.

" EVERY LINEMAN A KLEINMAN "



OBLIQUE CUTTING PLIER

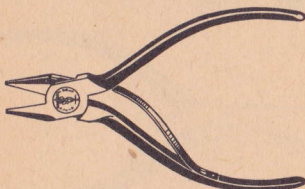


No. 210-5-L

For cutting small wires or trimming plastic. Entire length of cutting knives works flush against cutting surface giving a close, clean trim.

CAT. NO.	SIZE	WEIGHT PER DOZ.
210-5-L	5-inch	3 $\frac{3}{4}$ lbs.
210-5 (less leaf spring)	5-inch	4 lbs.
210-6-L	6-inch	3 $\frac{3}{4}$ lbs.
210-6 (less leaf spring)	6-inch	5 lbs.

LIGHTWEIGHT OBLIQUE CUTTING PLIER

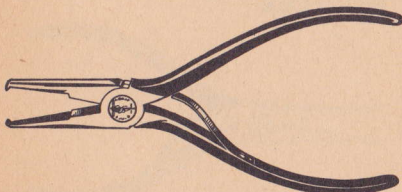


No. 209-5-L

Smaller than No. 210-5 with an extremely narrow head for cutting in confined places. Entire length of cutting knives works flush against cutting surface for a close, clean trim.

CAT. NO.	SIZE	WEIGHT PER DOZ.
209-5-L	5-inch	2 $\frac{1}{2}$ lbs.
209-5 (less leaf spring)	5-inch	2 $\frac{1}{2}$ lbs.

TRANSVERSE END CUTTING PLIER



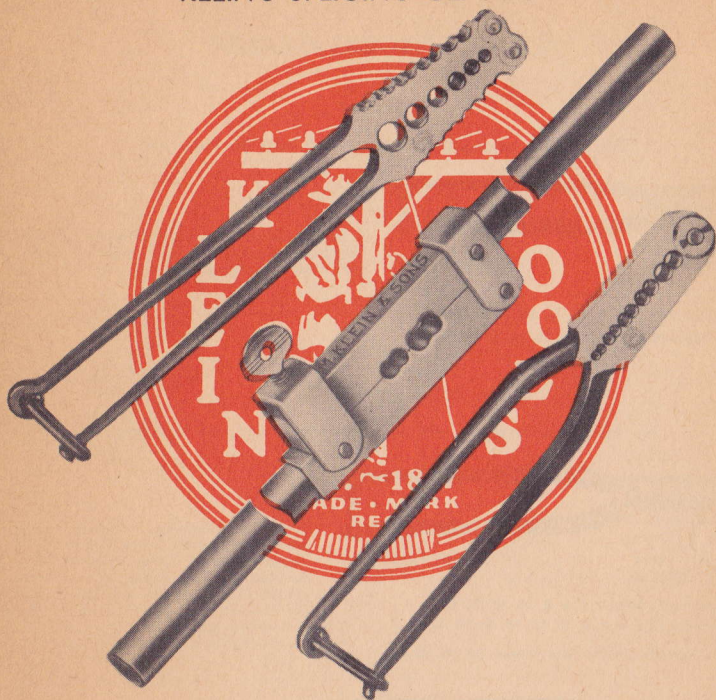
No. 204-6-L

Useful in precision work where ordinary oblique or end cutters are too bulky. Permits a clean, flush cut.

CAT. NO.	SIZE	WEIGHT PER DOZ.
204-6-L	6-inch	3 $\frac{1}{4}$ lbs.
204-6 (less leaf spring)	6-inch	3 $\frac{1}{4}$ lbs.

" EVERY LINEMAN A KLEINMAN "

KLEIN'S SPLICING CLAMPS



Of all the tools in use, the lineman's splicing clamp is one of the most abused, for in the absence of something more appropriate, the splicing clamp often serves as hammer, wrench or crow bar and then again it must be of service in making dependable electrical and mechanical joints. It is obvious that not "any old thing" is profitable. Apart from the abuse-resisting qualities, the tool must be properly proportioned, the jaws must be properly tempered and hardened so as to

resist wear, the handles must be resistant to bending strain and retain their normal set, and the dies for holding the wires and sleeves must fit. To all this especial attention is given in Klein Splicing Clamps.

Klein Splicing Clamps, shown on the following pages, accommodate the complete range of sleeve and wire sizes practical for a single hand tool. The di-stock type clamp is designed for the larger sizes and is finished to special order.

A few drops of light oil at the hinge occasionally will keep your clamps working smoothly as well as add to their life.

“ E V E R Y L I N E M A N A K L E I N M A N ”



KLEIN'S SPLICING CLAMPS

No. 102-1

This clamp is arranged with five round holes for bare wire.



CAT. No. SIZE AV. WEIGHT PER DOZ.

102-1 8-inch 5¾ lbs.

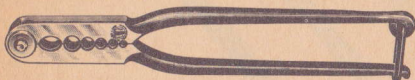
Copper wire Nos. 8, 10, 12, 14, 16, B. & S.

Iron wire Nos. 10, 12, 14, 16, 18, B. W. G.

A handy pocket size, adapted especially for telephone troublemen. The openings cover wire sizes in general use.

No. 102-3 and No. 102-30

For bare wire, arranged with five round holes and one oval hole.



CAT. No. SIZE AV. WEIGHT PER DOZ.
102-3 10¾-inch 16¾ lbs.

Copper wire Nos. 2, 4, 6, 8, 10, 12, B. & S.

Iron wire Nos. 4, 6, 8, 10, 12, 14, B. W. G.

(For same wires but holes reversed. See No. 102-30)

Used in telephone, telegraph and power line work, covering a wide range of wires. Large hole can also be used in serving guy wire or messenger strand, and is sometimes used for No. 4 copper sleeves. The dies fit the wires snugly to insure perfect mechanical and electrical joints.



CAT. No. SIZE AV. WEIGHT PER DOZ.
102-30 10¾-inch 16¾ lbs.

Copper wire Nos. 2, 4, 6, 8, 10, 12, B. & S.

Iron wire Nos. 4, 6, 8, 10, 12, 14, B. W. G.

(For same wires but holes reversed. See No. 102-3)

In the 102-3 the large hole is at the hinge. In the 102-30 the holes have been reversed, to meet the requirements of those preferring this arrangement.

Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S SPLICING CLAMPS

No. 102-48

This clamp has five openings for twisting bare copper wire.

Designed to meet the general range of wire sizes used by Electric Light and Power Companies.

The largest hole is also convenient to bring together the guy strand before applying a three bolt clamp.



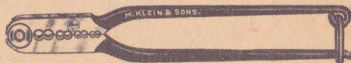
CAT. No.	SIZE	AV. WEIGHT PER DOZ.
102-48	10 $\frac{3}{4}$ -inch	16 $\frac{1}{4}$ lbs.

Copper wire Nos. 0, 2, 4, 6 and 8, B. & S.

No. 105-15

For twisting double tube sleeves.

This is a convenient pocket size splicing clamp. The chambers are arranged to fit the sleeves snugly so that sleeves are not injured in twisting and insure perfect mechanical and electrical joints.



CAT. No.	SIZE	AV. WEIGHT PER DOZ.
105-15	8-inch	5 $\frac{3}{4}$ lbs.

Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S.
Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

No. 105-17 (Type "B")

This clamp has five sets of chambers for twisting double tube sleeves

This clamp is intended for telephone, telegraph and power line work. The chambers are arranged to fit the sleeves snugly so that sleeves are not injured in twisting and insure perfect mechanical and electrical joints.



CAT. No.	SIZE	AV. WEIGHT PER DOZ.
105-17	10 $\frac{3}{4}$ -inch	17 lbs.

Copper sleeves Nos. 6, 8, 10, 12 and 14, B. & S.
Copper sleeves Nos. 12, 14 and 17, N. B. S.
Iron sleeves Nos. 8, 10, 12, 14, 16 and 19, B. W. G.

Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

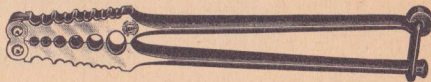
"EVERY LINEMAN A KLEINMAN"



KLEIN'S COMBINATION WIRE AND SLEEVE CLAMPS

No. 132-15

For General Telephone Line Work



CAT. No. SIZE
132-15 11 $\frac{1}{4}$ -inch

AV. WEIGHT PER DOZ.
18 lbs.

Copper wire Nos. 4, 6, 8, 10, 12, B. & S.
Iron wire Nos. 6, 8, 10, 12, 14, B. W. G.
Oval hole .437 x .624.

Copper sleeves Nos. 6, 8, 10, 12, 14, 17, B. & S.
Iron Sleeves Nos. 8, 10, 12, 14, 16, 19, B. W. G.

This clamp has five round holes for twisting bare wire. One oval hole for guy strand, .437 x .624.

The reverse side has five double chambers

for twisting double tube sleeves.

This clamp covers complete range of wires as usually handled by telephone and telegraph linemen.

No. 132-46

For General Power and Light Line Work



CAT. No. SIZE
132-46 11 $\frac{1}{4}$ -inch

AV. WEIGHT PER DOZ.
17 $\frac{3}{4}$ lbs.

Copper wire Nos. 4, 6, 8, 10, 12, B. & S.
Iron wire Nos. 6, 8, 10, 12, 14, B. W. G.
Oval hole .437 x .624.

Copper sleeves Nos. 4, 6, 8, 10, 12, B. & S.
Iron sleeves Nos. 6, 8, 10, 12, 14, B. W. G.

This clamp has five round holes for twisting bare wire. One oval hole for guy strand, .437 x .624.

The reverse side has five double chambers for twisting double tube sleeves.

This clamp is similar to No. 132-15 but is arranged to take copper sleeves No. 4 to No. 12 B. & S. It is intended particularly for use of power companies requiring this range of sizes.

Sleeve openings modified for single (oval) tube sleeves to order.

Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

" E V E R Y L I N E M A N A K L E I N M A N "



KLEIN'S COMBINATION WIRE AND SLEEVE CLAMPS

No. 132-12



CAT. No. SIZE

132-12 9-inch

AV. WEIGHT PER DOZ.

11 lbs.

Copper wire Nos. 6, 8, 10, 12, B. & S.
Iron wire Nos. 8, 10, 12, 14, B. W. G.

Copper sleeves Nos. 8, 10, 12, 14, 17, B. & S.
Iron sleeves Nos. 10, 12, 14, 16, 19, B. W. G.

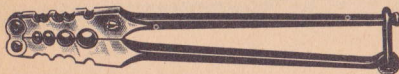
Standard telephone splicing clamp for general line and trouble work.

This clamp has four round holes for twisting bare wire.

The reverse side has four double chambers for twisting double tube sleeves.

No. 132-30

For Railroad Signal and Telegraph Work



CAT. No. SIZE

132-30 11 1/4-inch

AV. WEIGHT PER DOZ.

18 lbs.

The sleeve openings are for N.B.S. and B.W.G. sizes 9 and 8 respectively. The remaining five openings cover the range of

wire sizes generally used on Railroad Signal and Telegraph construction.

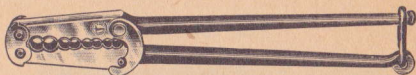
Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S "COPPERWELD" SLEEVE CLAMP

No. 132-48 (For Copperweld)



CAT. No. SIZE

132-48 1 1/2-inch

AV. WEIGHT PER DOZ.

18 lbs.

This clamp has four chambers for twisting single tube (oval) sleeves used for making joints on Copperweld conductors sizes

- 4A Copperweld or No. 1 solid B. & S. or No. 2 strand B. & S. Copper
- 6A Copperweld or No. 3 solid B. & S. or No. 4 strand B. & S. Copper
- 8A Copperweld or No. 4 solid B. & S. or No. 5 strand B. & S. Copper
- 3 No. 12 Copperweld or No. 5 solid B. & S. or No. 6 strand B. & S. Copper

4A, 6A, 8A and 3 No. 12. These chambers also accommodate single tube (oval) sleeves as per following table.

The swing latch provided holds the head securely closed while joint is being twisted, preventing any slippage or "burning" which

might develop otherwise from bowing of handles when twisting the larger sleeves.

KLEIN'S STRAND AND WIRE HOLDING TOOL

No. 132-39



CAT. No. SIZE

132-39 1 1/4-inch

AV. WEIGHT PER DOZ.

18 lbs.

This tool serves as a temporary clamp to hold together two sections of strand or wire while

placing permanent clamps or splicing and serving. A real convenience and time saver.

Openings will fit:

1 1/8" strand (16,000 lb. Bell System)

3/8" strand (10,000 lb. Bell System)

7/64" solid No. 12 B. W. G. Iron or No. 10 B. & S. Copper Wire

3/32" solid No. 13 B. W. G. Iron or No. 11 B. & S. Copper Wire

5/8" strand (6,000 lb. Bell System)

3/8" strand (2,200 lb. Bell System)

Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S WIRE AND SLEEVE CLAMPS

No. 132-47



CAT. No. SIZE
132-47 1 1/2-inch

AV. WEIGHT PER DOZ.
18 lbs.

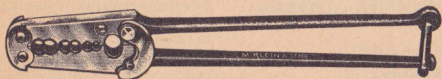
This clamp has five special chambers for twisting single tube or oval (Memco) sleeves Nos. 2, 4, 6 and 8 and No. .104.

These sizes cover the range most generally used by Electric Light and Power Companies. The chambers (or openings) are a modified "figure 8" shape, giving a secure hold which prevents "burning" the sleeve when the joint is twisted.

The swing latch provided is necessary to overcome any spring in the handle which might otherwise develop in a tool of this type when used on larger sleeves.

A stop in the hinge prevents the handles from opening beyond the point convenient for clamping on to the sleeve.

No. 132-74



CAT. No. SIZE
132-74 1 1/2-inch

AV. WEIGHT PER DOZ.
16 lbs.

This clamp has three special chambers for twisting single tube or oval (Memco) sleeves Nos. 2, 4 and 6. Also an oval (hog) hole .437 x .624 for guy strand.

The chambers (or openings) are a modified "figure 8" shape, giving a secure hold which prevents "burning" the sleeve when the joint is twisted.

The swing latch provided is necessary to overcome any spring in the handle which might otherwise develop in a tool of this type when used on the larger sleeves.

A stop in the hinge prevents the handles from opening beyond the point convenient for clamping on to the sleeve.

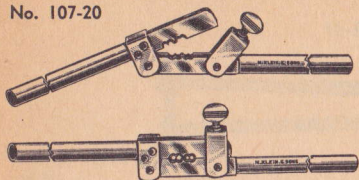
Hammer Forged from High Grade Tool Steel. Polished Heads and Handles Temper Blued.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S "DI-STOCK" SLEEVE TWISTER

No. 107-20



CAT. No. 107-20 (for oval or double tube sleeves)
(copper or aluminum) 3¼ lbs.
Length overall, 23½ in.

This tool has been improved by making the handles tubular ⅞" diameter and threading them onto the head. They can be readily attached or removed—a real convenience when

clearance is limited, also affording considerable reduction in weight.

We recommend this Di-Stock for use on a selection of types and makes of sleeves from No. 4 B. & S. Solid up to No. 3/0 B. & S. Strand. (For larger sleeves see Di-Stock No. 107-34.)

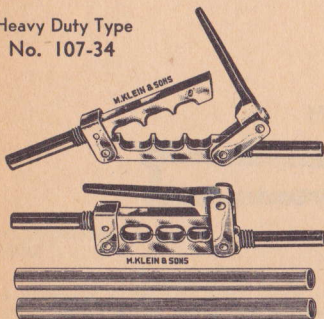
Space between yokes is 3"—usually sufficient for three sleeve openings.

The head is readily tightened onto the sleeve and securely held by means of a thumb nut operating in the hinged yoke as illustrated. The central position of the head makes for ease in keeping the sleeve straight while the joint is being twisted, besides providing ample leverage.

These tools are held in blank and finished with sleeve openings as ordered.

(See note regarding details of sleeve sizes required with your order.)

Heavy Duty Type
No. 107-34



CAT. No. 107-34 (for oval or double tube sleeves)
(copper or aluminum) 8¾ lbs.
Length overall, 34 in.

This tool is similar to the Klein Di-Stock Sleeve Twister No. 107-20 but is of heavier construction for use on larger size sleeves. Of ample capacity for sleeves No. 3/0 B. & S. up to 500,000 c.m. B. & S. and corresponding size aluminum. The handles are tubular 1½" diameter and are attached to the head by means of a quick acting thread. This arrangement makes it possible to remove either of the handles quickly and easily when clearance is required.

A hand operated lock lever closes the head easily on the sleeve and maintains it securely in position while the joint is being made.

Distance between the yokes on the head is approximately 4 inches, giving ample room for two or even three sleeve openings of large size. The head is forged from high grade tool steel and is heat treated for maximum toughness and wear.

We carry a stock of these tools in blank and cut the openings to order as required.

(See note regarding details of sleeve sizes required with your order.)

NOTE—There being no standard on sleeves, actual samples for which twisting tools are desired should accompany order. When this cannot be done the following data MUST be furnished. (1) Trade name or name of manufacturer. (2) Sleeve number or size. (3) Type of sleeve (oval, double-tube, etc.). (4) Size and type of conductor sleeves will be used on.

KLEIN'S LINEMEN'S CLIMBERS (Also Called "Spurs" or "Hooks")



SAFETY AND COMFORT

Safety is the first and vital point in considering climbers, since the lineman must depend entirely on his spurs during most of his working hours.

To assure the utmost dependability, Klein Climbers are forged from special steels and are individually tempered under expert supervision. The shanks and gaffs are individually tested to insure perfect riveting and temper.

The shape of Klein Climbers is the result of many years' experience and much practical suggestion from linemen. Bad fitting climbers cause as much discomfort as ill-fitting shoes. Klein Climbers have flexible shanks and yield readily to the pressure of the leg, they do not chafe. The gaff or spur is correct in shape, set of angle and temper. It is riveted to the leg iron securely. All climbers have aluminum finish.

Klein "Pole Master" Climbers (page 34) have been developed to give better support to the arch of the foot. They are made in matched pairs—one to fit the right leg, and one to fit

the left. The triangular strap rings at ankle, on Klein "Pole Master" and "Streamlined" Climbers, are steel drop forgings—an important safety feature.

Another development is the "adjustable" feature now available for all Klein Climbers. This adjustment covers sizes 15 to 18 inches by half-inch variations, and reduces the necessity of stocking many sizes. (See page 33.) All Adjustable Climbers can be furnished complete with straps and pads.

Linemen in general recognize Klein Climbers as the standard.

Worn gaffs can be replaced by sending the climbers to us. We require this to assure dependable workmanship and temper. It is not good safety practice to continue using climbers after the gaffs are worn to less than $1\frac{1}{4}$ inches long (measured on the underside).

We cannot consider any claim for replacement of climbers on which the gaffs show evidence of grinding, re-tempering or other misuse.

"EVERY LINEMAN A KLEINMAN"



PROPER USE OF KLEIN GAFF GAUGE KG No. 1

This gaff gauge is offered for the purpose of checking the proper width and thickness of climber gaffs. The main purpose of this gauge is to serve as a guide to the persons sharpening gaffs. The Klein gauge is conveniently packaged in a plastic case.

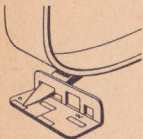


Illustration A

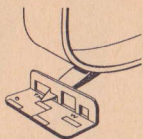


Illustration B

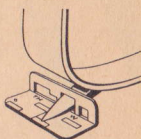


Illustration C

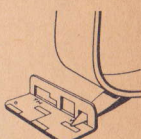


Illustration D

CHECK FOR THICKNESS

- Insert gaff as far as possible through large slot in Section marked "TH". The point of the gaff should fall within the limits formed by the last line and the edge of the gauge as illustrated. This assures the proper thickness of the gaff approximately 1" from the point.
- Insert gaff as far as possible through small slot in Section marked "TH". The point should fall within the center two lines as illustrated. This assures the proper thickness of the gaff $\frac{1}{2}$ " from the point.
- Insert point of gaff in small round hole. Point of gaff should be flush with opposite face.

CHECK FOR WIDTH

- Insert gaff as far as possible through large square hole in Section "W". The point should fall within the limits formed by the last line and the edge of the gauge as illustrated. This assures proper width of the gaff approximately 1" from the point.
- Insert gaff as far as possible through small hole in Section "W". The point should fall within the limits formed by the center two lines as illustrated. This assures proper width of the gaff approximately $\frac{1}{2}$ " from the point.
- Center line on gauge indicates minimum safe length ($1\frac{1}{8}$ " of gaff measured on underside.

INSTRUCTIONS for Sharpening Gaffs (Spurs) on KLEIN CLIMBERS



Incorrect

Side View



Correct



Incorrect

Front View



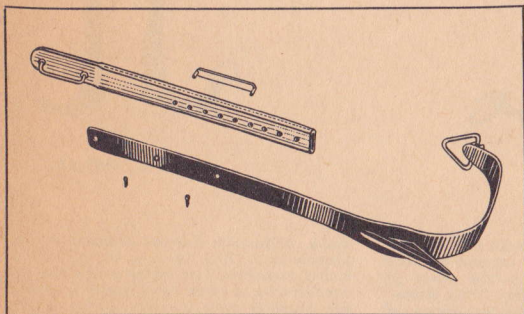
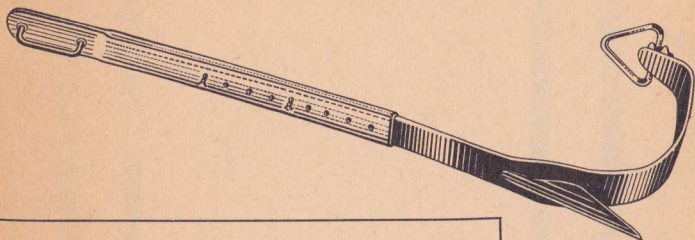
Correct

- Always use sharp smooth file. NEVER grind to a point on any kind of wheel as you are likely to set up heat which will spoil the temper of the gaff and make it dangerous to use.
- Set climber in a vise with the gaff uppermost and the stirrup of the climber turned down so that you can file from heel to point of gaff. File toward the point and down to the edges of the underside of the gaff. Remove only sufficient material to make a good point.
- Do not make a needle point. File both side slopes to even rounded surfaces. The top ridge of the gaff must be perfectly straight and should not be touched unless necessary. The final point is always in the top ridge of the gaff.
- The underside of the gaff should be left perfectly straight to within $\frac{3}{4}$ " of the point, then rounded slightly toward the top ridge of the gaff on a radius of $\frac{1}{4}$ ". At a distance of $\frac{1}{4}$ " back from the point, you should have a width of approximately $\frac{3}{8}$ " measured on the underside of the gaff. The remainder of the underside should be kept perfectly straight.
- For safety, climbers should not be used after the gaffs are worn or filed to $1\frac{1}{8}$ " long, measured on the underside of the gaff. When climbers get in this condition, they should be regaffed or a new pair obtained. By following these simple instructions, a satisfactory job can be secured and no unnecessary risks taken.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S ADJUSTABLE CLIMBERS



All Klein Climbers shown on the following pages are furnished either in the regular fixed length patterns, in a full range of sizes, or in the new Klein adjustable patterns.

Klein Adjustable Climbers may be quickly adjusted to fit the lineman. They assure proper fit and reduce the necessity of stocking many sizes. Klein Adjustable Climbers have the same high quality construction as

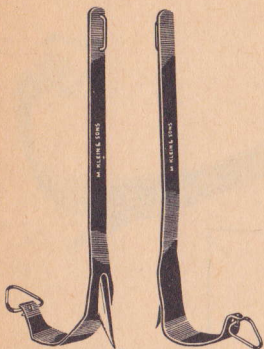
other Klein Climbers. Made of forged steel, individually tempered and tested. All climbers aluminum finish.

Sliding portion of leg iron is made of steel—one-piece construction permits adjusting climber to 15, 15½, 16, 16½, 17, 17½ and 18 inch sizes. It is attached to climber shank with steel fastening bracket, engaging through two holes and secured with cotter pins.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S "POLE MASTER" LINEMEN'S CLIMBERS



No. 1945



No. 1945-ADJ

Extra wide stirrup gives more arch support. Leg irons are flexible and tapered in width and thickness so that ankles and calves get better support without chafing. "Pole Master" Climbers have an offset shank that brings gaff in proper line with the leg bone to provide greater security and comfort.

Made in matched pairs—one "right," the other "left"—with drop forged triangular strap rings at ankle. Stock sizes in fixed length pattern: 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to end of

shank. Adjustable pattern climbers are adjustable to 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to top of slide. Special sizes in either fixed length or adjustable climbers made to order. *Every climber individually tested.*

Gaffs 3½ inches long measured on the outside. All climbers have aluminum finish.

When Ankle Straps No. 5301-16 or 5301-26 are desired attached at the factory, specify on your order. No extra charge. (See pages 41 and 42 for Climber Pads.)

CAT. No.

AV. WEIGHT PER PAIR

1945 Drop Forged Triangular Strap Rings at Ankle	3¼ lbs.
1945-ADJ Drop Forged Triangular Strap Rings at Ankle	3¼ lbs.
C-1945-ADJ Complete with Straps and Pads	3¾ lbs.

Adjustable Climbers are available completely assembled with Straps and Pads. The following items are furnished with this assembly:
No. 5301-9 Calf Straps, No. 5301-26 Ankle Straps and No. 8207 Climber Pads.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S "STREAMLINED" CLIMBERS

No. 1939

Patent No. 2,200,450, Design Patent 119,896

The use of any unnecessary metal has been carefully avoided in this design. The leg irons are flexible and tapered in width and thickness. The critical section from 3 inches above the gaff to half way across the stirrup has been designed for ample strength. The gaffs are slender type—preferred on treated ("Black Jack") poles. Gaffs $3\frac{1}{2}$ inches long measured on the outside. A drop forged triangular ring carries the ankle strap. All climbers aluminum finish.

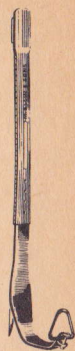
These climbers are approximately one third lighter in weight than standard patterns and about 10% lighter than the original "lightweight."

They offer every possible comfort and a full factor of safety.

Stock sizes in fixed length pattern: 15, $15\frac{1}{2}$, 16, $16\frac{1}{2}$, 17, $17\frac{1}{2}$ and 18 inches, measured from instep to end of shank. Adjustable pattern climbers are adjustable to 15, $15\frac{1}{2}$, 16, $16\frac{1}{2}$, 17, $17\frac{1}{2}$ and 18 inches, measured from instep to top of slide. Special sizes in either fixed length or adjustable climbers made to order. *Every climber individually tested.*



No. 1939



No. 1939-ADJ

When Ankle Straps No. 5301-16 or 5301-26 are desired attached at the factory, specify on your order. No extra charge. (See pages 41 and 42 for Climber Pads.)

CAT. No.

AV. WEIGHT PER PAIR

1939 Riveted Top Loop, Drop Forged Triangular Ring at Ankle	21½ lbs.
1939-ADJ Riveted Top Loop, Drop Forged Ring at Ankle	27⅞ lbs.
C-1939-ADJ Complete with Straps and Pads	31½ lbs.

Adjustable Climbers are available completely assembled with Straps and Pads. The following items are furnished with this assembly: 5301-9 Calf Straps, No. 5301-26 Ankle Straps and No. 8207 Climber Pads.

KLEIN'S STANDARD CLIMBERS

No. 1901-M

Stock sizes in fixed length pattern: 15, $15\frac{1}{2}$, 16, $16\frac{1}{2}$, 17, $17\frac{1}{2}$ and 18 inches, measured from instep to end of shank. Adjustable pattern climbers are adjustable to 15, $15\frac{1}{2}$, 16, $16\frac{1}{2}$, 17, $17\frac{1}{2}$ and 18 inches, measured from instep to top of slide. Special sizes in either fixed length or adjustable climbers made to order. *Every climber individually tested.*

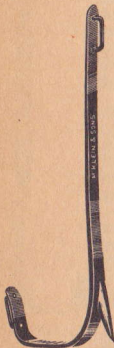
Gaffs $3\frac{1}{2}$ inches long measured on the outside. All climbers aluminum finish.

CAT. No.

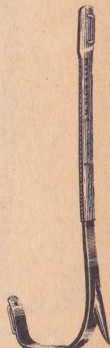
AV. WEIGHT PER PAIR

1901-M Riveted Strap Loops	3⅜ lbs.
1901-M-ADJ Riveted Strap Loops	3¾ lbs.
(For Climber Straps and Pads, see pages 39 to 42.)	
C-1901-M-ADJ Complete with Straps and Pads	4¼ lbs.

Adjustable Climbers are available completely assembled with Straps and Pads. The following items are furnished with this assembly: No. 5301-9 Calf Straps, No. 5301-10 Ankle Straps and No. 8207 Climber Pads.



No. 1901-M



No. 1901-M-ADJ

NOTE—In ordering fixed length climbers always mention the length of shank wanted. Measure from instep to the extreme end of leg irons which should come one in. below the knee joint for comfort. The position of the gaff hole in the leg iron makes it impracticable to interchange gaffs between linemen's climbers and tree climbers or vice versa.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S "LIGHTWEIGHT" LINEMEN'S CLIMBERS

No. 1903



No. 1903

Stock sizes in fixed length pattern: 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to end of shank. Adjustable pattern climbers are adjustable to 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to top of slide. Special sizes in either fixed length or adjustable climbers made to order. *Every climber individually tested.*

These climbers are similar to No. 1901-M, but are made somewhat lighter in the leg iron.

Gaffs 3½ inches long measured on the outside. All climbers aluminum finish.

CAT. No.	AV. WEIGHT PER PAIR
1903 Riveted Strap Loops	27½ lbs.
1903-ADJ Riveted Strap Loops	33½ lbs.
(For Climber Straps and Pads, see pages 39 to 42.)	
C-1903-ADJ Complete with Straps and Pads	37½ lbs.

Adjustable Climbers are available completely assembled with Straps and Pads. The following items are furnished with this assembly: No. 5301-9 Calf Straps, No. 5301-10 Ankle Straps and No. 8207 Climber Pads.



No. 1903-ADJ

KLEIN'S TREE CLIMBERS

No. 1907



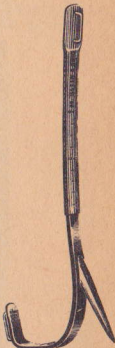
No. 1907

These climbers are similar to the No. 1901 but are furnished with extra long gaffs necessary to penetrate bark in tree climbing. The gaffs (or spurs) are 5½ inches long, measured on the outside, 3½ inches long, measured on the underside. They are set high in the leg iron so that the points clear the ground when walking. These are the standard tree climbers used by Forest Rangers, High Riggers, Fire Wardens and Surveyors.

Stock sizes in fixed length pattern: 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to end of shank. Adjustable pattern climbers are adjustable to 15, 15½, 16, 16½, 17, 17½ and 18 inches, measured from instep to top of slide. Special sizes in either fixed length or adjustable climbers made to order. All climbers aluminum finish. *Every climber individually tested.*

CAT. No.	AV. WEIGHT PER PAIR
1907 Riveted Strap Loops	4 lbs.
1907-ADJ Riveted Strap Loops	4¼ lbs.
(For Climber Straps and Pads, see pages 39 to 42.)	
C-1907-ADJ Complete with Straps and Pads	4¾ lbs.

Adjustable Climbers are available completely assembled with Straps and Pads. The following items are furnished with this assembly: No. 5301-9 Calf Straps, No. 5301-10 Ankle Straps and No. 8207 Climber Pads.



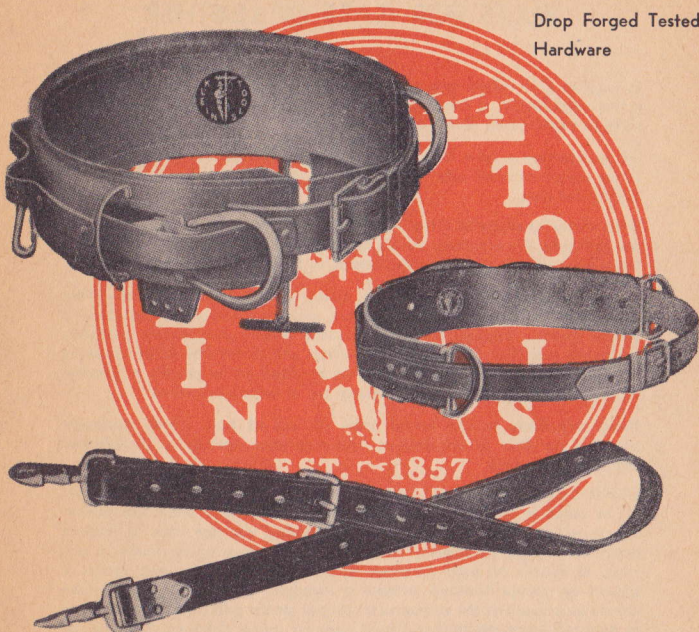
No. 1907-ADJ

NOTE—In ordering fixed length climbers always mention the length of shank wanted. Measure from instep to the extreme end of leg irons which should come one in. below the knee joint for comfort. The position of the gaff hole in the leg iron makes it impracticable to interchange gaffs between linemen's climbers and tree climbers or vice versa.

"EVERY LINEMAN A KLEINMAN"

KLEIN'S BELTS, SAFETY STRAPS AND LEATHER GOODS

Drop Forged Tested
Hardware



The name "Mathias Klein & Sons" or the Klein trade-mark on leather goods assures quality and trustworthiness.

The very life of a lineman depends upon the reliability of his belt and strap. First cost is incidental—quality **MUST** be the best.

Klein's leather is first quality "slow process" vegetable tanned harness leather selected for its strength and durability and checked by chemical analysis and frequent laboratory tensile tests.

The same skilled workmanship is evident on those Belts and Safety Straps we list, where

"Klein-Kord" replaces leather. (For a description of this special fabric see page 52.)

All genuine "Klein" "D" Rings, Snaps and Buckles are drop forged from bar steel in our own plant and individually tested to 1500 lbs.

All sewing is done with hot waxed genuine Irish linen thread, lock stitched. Riveting by hand with solid copper rivets.

"Klein" Belts and Straps are standard with and exclusively specified by many of the largest utility corporations, railroads, fire departments, etc. in the country.

Write for special bulletins giving actual specifications, drawings and other vital information on the factor of safety of Belts and Safety Straps. These are furnished gratis.

"EVERY LINEMAN A KLEINMAN"



RULES FOR CARE OF LEATHER

It pays to give safety straps and tool belts proper attention. Below are a few rules, which, if carefully followed, will give you service you have a right to expect from Klein leather goods.

Go over leather at least once every 90 days and scrape out the "scale" that forms whenever metal rubs against the leather. Examine for stretch, wear, cracks and cuts.

Take a small quantity of *Neat's-foot oil on a rag and rub into the leather on the hair side. Do not flush the oil on directly from the can—every inch of the leather should be uniformly covered to keep it pliable and waterproof.

In storage particular care should be taken to keep belts and straps away from direct or close contact with heat, such as steam coils, radiators or stoves. Leather exposed to such conditions rapidly deteriorates and loses its tensile strength. It becomes dry, brittle and unreliable. After exposure to water or acid, belts and straps should be wiped off as quickly as possible with an oily rag dipped in *Neat's-foot oil as before described.

Never dry damp or wet leather with the aid of heat. Such treatment weakens the fiber of the leather, and may even destroy it if sufficient temperature is used.

BEND TEST—This should only be made when leather contains sufficient oil to make it soft and pliable. At room temperature bend the leather slowly with the grain side out over a mandrel not less than $\frac{1}{2}$ inch in diameter through an angle of 180° . Do not bend at buckle holes in any case. If leather of such thickness as necessary for Belts and Straps is abused by abrupt bending without a mandrel, the leather may develop cracks on account of the excessive strain put on the grain side. When tested as directed above, the leather should show no cracks although there may be a slight opening up of the grain surface.

NEAT'S-FOOT OIL

For the convenience of our customers and to ensure the best grade, we furnish genuine Neat's-foot oil in cans with full directions for use as follows:



CAT. No.

WEIGHT PER DOZ.

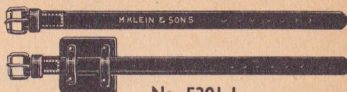
N.O.-1	Pint Can	15 lbs.
N.O.-2	Quart Can	27 lbs.
N.O.-4	Half Gallon Can	52 lbs.



KLEIN'S CLIMBER STRAPS WITH SQUARE PADS

The set consists of:

- 2 upper (or calf) straps $1\frac{1}{4}$ " x 22".
- 2 lower (or ankle) straps $1\frac{1}{4}$ " x 22".
- 2 square pads 4" x 4".



No. 5301-1

CAT. No.

AV. WEIGHT PER DOZ. SETS

5301-1	One set complete with plain pads	20 lbs.
5301-2	One set complete with sheep-lined pads	20 lbs.
5301-3	One set complete with felt-lined pads	20 lbs.

SAME AS ABOVE BUT STRAPS 1" WIDE.

5301-11	One set complete with plain pads	18 lbs.
5301-12	One set complete with sheep-lined pads	18 lbs.
5301-13	One set complete with felt-lined pads	18 lbs.

KLEIN'S CLIMBER STRAPS WITH OBLONG PADS

"Bell System" Type

The set consists of two upper or calf straps 1" x 22" with two special pads as shown and two lower or ankle straps 1" x 26".



No. 5301-6

CAT. No.

AV. WEIGHT PER DOZ. SETS

5301-6	One set complete with plain pads	14 lbs.
5301-7	One set complete with sheep-lined pads	15 lbs.
5301-8	One set complete with felt-lined pads	15 lbs.

These pads are made of select leather, arranged with loops for climber straps and climber. Tapering $3\frac{3}{4}$ " to $2\frac{3}{4}$ " x $6\frac{1}{4}$ " deep.

KLEIN'S NYLON CLIMBER STRAPS



AV. WEIGHT PER DOZ. SETS

5301-18	1" x 22" Calf Strap	5 lbs.
5301-19	1" x 26" Ankle Strap	6 lbs.
5301-20	1" x 24" Special Ankle Strap for Ring Type Climber	7 $\frac{1}{2}$ lbs.

All leather furnished natural color.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S CLIMBER STRAPS

(Without Pads)



CAT. No.

AV. WEIGHT PER DOZ. PAIRS

5301-4	One pair (2 straps)	1 1/4" x 22" — calf strap	8 lbs.
5301-9	One pair (2 straps)	1" x 22" — calf strap	6 lbs.
5301-14	One pair (2 straps)	1 1/4" x 26" — ankle strap	9 lbs.
5301-10	One pair (2 straps)	1" x 26" — ankle strap	8 lbs.

KLEIN'S CLIMBER STRAPS (WITH PADS)



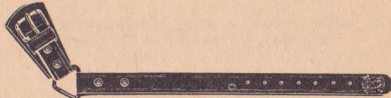
CAT. No.

AV. WEIGHT PER DOZ. PAIRS

5301-5	One pair (2 straps)	1 1/4" x 22" with two plain pads 4" x 4"	12 lbs.
5301-15	One pair (2 straps)	1" x 22" with two plain pads 4" x 4"	11 lbs.

KLEIN'S SPECIAL ANKLE STRAPS

(For Ring Attachment on Klein No. 1939, 1939-ADJ, 1945 and 1945-ADJ Climbers)



CAT. No.

AV. WEIGHT PER DOZ. PAIRS

5301-16	One pair (2 straps)	1 1/4" x 24" without ring	10 lbs.
5301-26	One pair (2 straps)	1" x 24" without ring	8 1/2 lbs.

These special straps are made in two pieces and are furnished with rivets and burrs. Punched ready for quick attachment. New type, drop forged, triangular ring gives support to full width of strap, minimizes wear

... assures greater instep comfort.

(We will rivet these ankle straps to No. 1939, 1939-ADJ, 1945 or 1945-ADJ climbers when so ordered. See pages 34 and 35 for climbers.)

All leather furnished natural color.

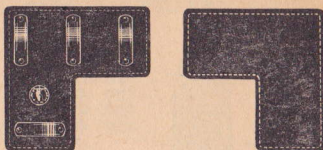
" EVERY LINEMAN A KLEINMAN "



KLEIN'S ANGLE SHAPE CLIMBER PADS

Right and left pad—of high grade latigo leather, padded for maximum comfort. The wing of the pad protects the leg from chafing and provides a more secure hold for the climber.

Size: 8" x 8".



CAT. No. AV. WEIGHT PER DOZ. PAIRS
8210 One pair (2 pieces), Angle Shape 12 lbs.

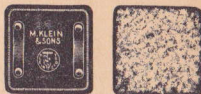
No. 8210

KLEIN'S CLIMBER PADS

(Standard Square Shape)

CAT. No.	AV. WEIGHT PER DOZ. PAIRS
8200 One pair (2 pcs.) Sheep-lined, 4"x4"	4 lbs.
8201 One pair (2 pcs.) Felt-lined, 4"x4"	4 lbs.
8202 One pair (2 pcs.) Plain leather, 4"x4"	4 lbs.

Made of select harness leather with loops at back through which climber strap passes.

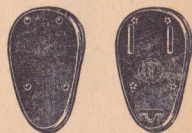


No. 8200

KLEIN'S PEAR SHAPE CLIMBER PADS

CAT. No.	AV. WEIGHT PER DOZ. PAIRS
8206 One pair (2 pcs.) Plain leather, 3 1/2"x6"	4 1/2 lbs.

These pads are made of two thicknesses of select harness leather riveted together. The outer piece is punched with two slots for the climber strap and one cross slot through which the leg iron of the climber is passed. They are very comfortable, having all edges round.

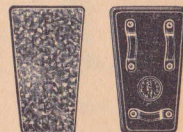


No. 8206

KLEIN'S "BELL SYSTEM" TYPE CLIMBER PADS

CAT. No.	AV. WEIGHT PER DOZ. PAIRS
8203 One pair (2 pcs.) Plain leather	6 lbs.
8204 One pair (2 pcs.) Sheep-lined	6 lbs.
8205 One pair (2 pcs.) Felt-lined	6 lbs.

These pads are approximately 6 3/4" long—3 3/4" wide at top, tapering to 2 3/4" at bottom.



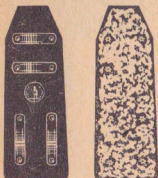
No. 8204

All leather furnished natural color.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S LONG TYPE CLIMBER PADS



No. 8208

CAT. No.

AV. WEIGHT PER DOZ. PAIRS

8207	One pair (2 pcs.) plain-leather	5 lbs.
8208	One pair (2 pcs.) sheep-lined	6 lbs.
8209	One pair (2 pcs.) felt-lined	6 lbs.

Made of selected harness leather with riveted leather loops. The climber passes through two loops, giving greater stability. Furnished plain, felt-lined, or sheep-lined. Size: 9" x 3½".

KLEIN'S CLIMBER GAFF GUARDS



No. 1901-MG

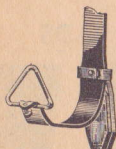
CAT. No.

AV. WEIGHT PER DOZ. PAIRS

1901-MG	One pair (2 pcs.)	1¾ lbs.
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Made of harness leather. The "wings" of the guard fit around leg iron of climber just above the gaff and snap on. The gaff is covered and protected by the leather "fold over" as illustrated. A stop piece of fiber acts to prevent point of gaff from penetrating guard.

A simple safety item.



No. 1945-G

CAT. No.

AV. WEIGHT PER DOZ. PAIRS

1945-G	1¾ lbs.
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A pair of Klein Gaff Guards will protect the points of climber gaffs and also safeguard other equipment when climbers are not in use. Guard is made of harness leather riveted construction. Flexible strap with snap fastens around leg iron.

All leather furnished natural color.

All leather furnished natural color.

" E V E R Y L I N E M A N A K L E I N M A N "



GENUINE KLEIN TOOL BELTS

Drop Forged Tested Hardware

DIRECTIONS TO ENSURE PROPER FIT OF LINEMEN'S BELTS

Linemen's belts are usually specified by waist or body size but to ensure comfort in use it is important that the "D" rings do not rest on the hip-bones of the wearer. The correct position of the "D" rings is about 1 inch in front of the hip-bone on either side.

To obtain correct body size of Klein's Tool Belt, measure (around the back) from hip-bone to hip-bone AND ADD TWO INCHES to this distance.

Then refer to table below and select the corresponding belt size.

Distance between "D" Rings.....	20 in.	22 in.	22 in.	24 in.	26 in.	28 in.
Belt Size.....	36 in.	38 in.	40 in.	42 in.	44 in.	46 in.

You may order by size or by distance between "D" rings.

"KLEIN-LINE" TOOL BELT

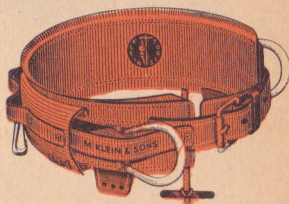
This sturdy new "Klein-Line" Tool Belt is designed to provide a maximum factor of safety with increased comfort and convenience to the lineman.

A full-floating, sliding trace of the famous "Klein-Kord" material—1¾ inches wide—carries the single bar Dee rings. This trace slides through leather guides, allowing approximately 6 inches of free movement. By this means the lineman is relieved of the chafing that is unavoidable with conventional belts, and undue wear on the safety strap is prevented. New apron design permits visual inspection of sliding trace throughout its entire length.

This apron, securely riveted to the belt, also carries the weight of tools in the harness leather tool loop strap. The tool strap, 1¾ inches wide, has five tool loops—is riveted on the apron with a reinforcing strap.

The soft, pliable, latigo leather cushion—4¾ inches wide—is pad-lined and edge-rolled for comfort.

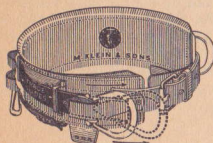
The 2-inch wide belt strap is of heavy harness leather with drop-forged buckle. A leather pad under the buckle provides additional comfort. Buckle and Dee rings tested to 1500 pounds. All sewing is lock stitched with hot waxed linen thread—rivets are solid copper, hand set. No rivets come through the



No. 5249

body pad—an extra safety insulating feature. Fitted with tape thong, knife snap and ring for glove pouch. Furnished with pocket tabs on both sides, punched for lacing. One, two or three partition holsters can be furnished to order; see pages 55-57.

*Rated tensile strength per square inch, 5660 lbs. See page 52.



PATENT APPLIED FOR

THE "KLEIN-KORD" TRACE — IT SLIDES

In this illustration, the body strap and apron have been cut away to show the "Klein-Kord" trace. Notice that Dee rings are riveted to this trace which passes through three leather guides. Shifting the body moves this trace up to 6 inches, preventing the belt's sliding around the body and also making it unnecessary to slide the safety strap around the pole. All strain is carried by this "Klein-Kord" trace.

CAT. No.

5249 With Standard "D" Rings. Width 4¾ in. 55 lbs.

AV. WEIGHT PER DOZ.

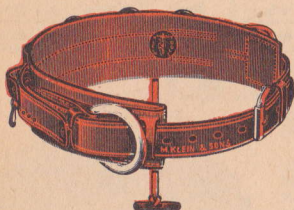
EVERY LINEMAN A KLEINMAN



KLEIN'S LEATHER TOOL BELTS

Made in Sizes 36, 38, 40, 42, 44 and 46 Inches (Other sizes to order)

(See Table Page 43)



No. 5228

The cushion—4½ inches wide at center of back and tapered to 3½ inches wide at the front—is soft, pliable, russet latigo leather, doubled to form comfortable rolled edges.

The body strap is first quality russet harness leather 2 inches wide, stitched to the cushion at back and passing through loops at end of cushion as well as through the "dee" rings. A russet harness leather tool strap 1¾ inches wide with five loops in the 1¼ inch loop strap is carried on leather hangers from the body strap to which it is looped at the ends.

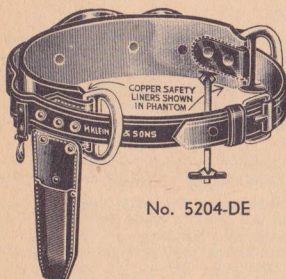
So constructed that no rivets come through to inside of belt—a safety insulation feature that will be appreciated.

The "dee" rings are single bar type solid steel drop forgings as is also the buckle. All hardware tested to 1500 lbs. Galvanized finish. Fitted with knife snap, tape thong and ring for glove pouch. One, two or three partition holsters can be furnished to order; see pages 55-57.

CAT. No.

5228 With Standard (Single bar) "D" Rings. Width 4½ in. (Complete) 45 lbs.

AV. WEIGHT PER DOZ.



No. 5204-DE

First quality and selection harness leather throughout. The cushion, 3½ inches wide, carries the Dee rings. The outer strap or tool loop is 1½ inches wide, formed into loops by riveting to the cushion. As an additional safety factor it is also passed through the Dee rings. Dee rings and buckle are solid steel drop forgings of improved design, everyone tested to 1500 lbs. Galvanized finish. Surfaces taking the wear of the Dee rings are protected by copper safety liners riveted through the full thickness of the belt. All rivets are solid copper, hand set with burrs. Sewing is with linen thread, hot waxed and lock stitched. A safety belt that is safe.

Furnished with plier pocket, knife snap, and tape thong.

CAT. No.

5204-D.E. With Standard "D" Rings. Width 3½ in. 38 lbs.

AV. WEIGHT PER DOZ.

All leather furnished natural color.

"EVERY LINEMAN A KLEINMAN"



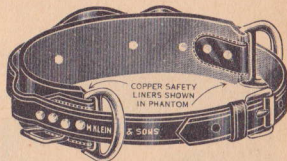
KLEIN'S LEATHER TOOL BELTS

Made in Sizes 36, 38, 40, 42, 44 and 46 Inches (Other sizes to order)

(See Table Page 43)

Made of select first quality harness leather. The cushion $3\frac{1}{2}$ inches wide carries the "D" rings. The outer or loop layer is $1\frac{1}{4}$ inches wide formed into tool loops by riveting to the cushion. It also passes through the "D" rings and is furnished with a strong drop forged buckle tested to 1500 lbs.

The "D" rings are solid steel drop forgings tested to 1500 lbs. Surfaces taking the wear of the "D" rings are protected with copper safety liners riveted through the full thickness of belt. All rivets are solid copper set with burrs and sewing is with hot waxed linen thread, lock stitched. "D" rings and buckle galvanized finish.



No. 5204

CAT. No.

5204 With Standard "D" Rings (double bar). Width $3\frac{1}{2}$ " 34 lbs.

AV. WEIGHT PER DOZ.

Made of select first quality harness leather. The inner or cushion layer $2\frac{1}{4}$ inches wide carries the "D" rings and is locked stitched and riveted to the outer layer which also passes through the "D" rings and is furnished with a strong drop forged buckle tested to 1500 lbs. Galvanized finish.

The "D" rings are solid steel drop forgings tested to 1500 lbs. Surfaces which take the wear of the "D" rings are protected with copper safety liners riveted to the belt. "D" rings and buckle are galvanized finish. All rivets are solid copper, set with burrs and sewing is with hot waxed linen thread, lock stitched. The loop strap is $1\frac{1}{4}$ inches wide formed into 6 loops.



No. 5205

CAT. No.

5205 With Standard "D" Rings (double bar). Width $2\frac{1}{4}$ " (double thickness) 35 lbs.

AV. WEIGHT PER DOZ.

All leather furnished natural color.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S LEATHER TOOL BELTS

Made in Sizes 36, 38, 40, 42, 44 and 46 Inches (Other sizes to order)

(See Table Page 43)

KLEIN'S "TEXAS" BELT



No. 5204-TSO

A popular belt made for comfort and safety. The main belt is in one piece lined throughout with soft pliable latigo leather. Width at center of back 4" tapered to 2 3/4" at hips. Dee Rings and Buckle solid steel drop forgings tested to 1500 lbs. Galvanized finish.

No rivets go through belt—a special insulating feature.

All rivets are solid copper hand set with burrs. Sewing is with hot waxed linen thread, lock stitched.

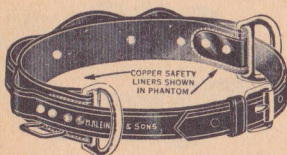
Has latigo flap to which plier pocket may be riveted or laced, and ring for glove pouch. One, two or three partition holsters can be furnished to order; see pages 55-57.

CAT. No.

5204-T.S.O. With Standard "D" Rings (single bar).

AV. WEIGHT PER DOZ.

36 lbs.



No. 5202

Made of select first quality harness leather. The cushion 2 1/4 inches wide carries the "D" rings. The outer or loop layer is 1 1/2 inches wide formed into tool loops by riveting to the cushion. It also passes through the "D" rings and is furnished with a strong drop forged buckle tested to 1500 lbs.

The "D" rings are solid steel drop forgings of improved design, tested to 1500 lbs. Surfaces taking the wear of the "D" rings are protected with copper safety liners riveted through the full thickness of belt. All rivets are solid copper set with burrs and sewing is with hot waxed linen thread, lock stitched. "D" rings and buckle galvanized finish.

CAT. No.

5202 With Standard "D" Rings (double bar). Width 2 1/4"

AV. WEIGHT PER DOZ.

32 lbs.

"EVERY LINEMAN A KLEINMAN"

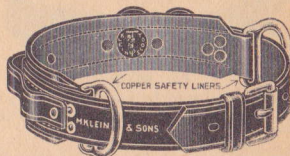


KLEIN'S LEATHER TOOL BELTS

Made in Sizes 36, 38, 40, 42, 44 and 46 Inches (Other sizes to order)

(See Table Page 43)

First quality harness leather throughout. The inner or cushion layer, 3 inches wide, is narrowed at each end to carry the "D" rings. The body strap, 2 inches wide, is riveted and stitched to the cushion and also passes through the "D" rings. Two tool straps are provided and formed into two loops at each side of the belt by riveting through the two layers of belt proper. "D" rings and buckle are solid steel drop forgings of improved design, each tested to 1500 lbs. They are made in our own shops and are galvanized to prevent rust. Surfaces taking the wear of the "D" rings are protected by copper safety liners riveted through the full thickness of



No. 5211

the belt. All rivets are solid copper, hand set with burrs. Sewing is with linen thread, hot waxed and lock stitched.

CAT. No.

5211 With Standard "D" Rings (double bar). Width 3" 34 lbs.

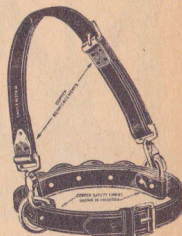
AV. WEIGHT PER DOZ.

KLEIN'S LEATHER BELT AND SAFETY STRAP

Drop Forged Tested Hardware

The Tool Belt in this outfit is same as No. 5202. The safety strap is the No. 5250. Belt $2\frac{1}{4}$ inches wide. Strap $1\frac{3}{4}$ inches. All snaps, "D" rings and buckles are solid steel drop forgings tested to 1500 lbs. and are galvanized finish. The strap may be adjusted to any length by means of buckle or it may be detached entirely from belt.

First quality harness leather throughout. Hot waxed linen thread, lock stitched. A very popular combination—thoroughly dependable.



No. 5206-1A

CAT. No.

SIZE

AV. WEIGHT PER DOZ.

5206-1A Strap $1\frac{3}{4}$ in. x 5 ft. 8 in. 62 lbs.

Belt (as ordered) 36, 38, 40, 42, 44 and 46 in.

All leather furnished natural color.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S DERRICK BELT

Made in One Size—Adjustable from 36" to 44"



No. 5212

This belt is designed for maximum safety for use by derrickmen, structural steel workers,

CAT. No.

5212

3 in. wide, 1 "Dee" Ring

5212-KK

As above, but furnished in Klein Kord fabric

AV. WEIGHT PER DOZ.

30 lbs.

30 lbs.

KLEIN'S STEEL WORKER'S BELT

Made in One Size—Adjustable from 36" to 44"



No. 5214

Steel Worker's Belt made of one piece of first quality harness leather two inches wide

CAT. No.

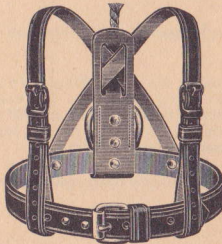
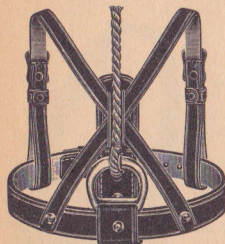
5214

2 in. wide, 3 "Dee" Rings

AV. WEIGHT PER DOZ.

28 lbs.

KLEIN'S LEATHER SAFETY HARNESS



CAT. No.

5209

Harness complete with life line. $\frac{3}{4}$ in. rope, 25 ft. long

AV. WEIGHT PER DOZ.

75 lbs.

All leather furnished natural color.

tree surgeons, tower erectors, etc. The main belt is one piece of first quality harness leather three inches wide at the back, tapered to two inches in width at the buckle. A three inch forged steel dee ring is set at center of back to provide means for securely anchoring the life line or rope. The buckle is solid forged frame fitted with double tongues to guard against slitting the belt in event of a fall. Designed to stand a load of 250 lbs. on a dead fall of five feet. Adjustable for sizes 36" to 44".

and fitted with three forged dee rings for attachment of life line in most convenient position. A leather loop is provided for wrench.

The main belt passes through the dee rings which are held in place by backing pieces of latigo leather stitched and riveted to the belt proper.

The two inch buckle is of the double tongue type with solid forged frame.

Distance between outer dee rings 24". Adjustable for sizes 36" to 44".

For use where danger from gassing is present. *The design of the harness is such that it slings the wearer in a perpendicular position so that he can be readily hauled through an ordinary manhole opening.*

A solid harness leather back plate $2\frac{3}{4}$ inches by 10 inches is stitched and riveted around the $1\frac{1}{4}$ inch adjustable belt strap. The back plate also carries a tested drop forged "D" ring to which the $\frac{3}{4}$ inch rope life line, 25 feet in length, is permanently attached.

The shoulder straps are $\frac{3}{4}$ inch and made adjustable and riveted to the belt at the single ends.

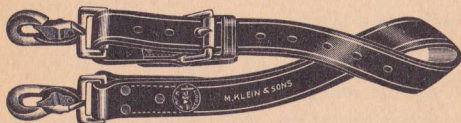
" EVERY LINEMAN A KLEINMAN "



KLEIN'S LEATHER SAFETY STRAPS—1 $\frac{3}{4}$ " WIDE

Drop Forged Tested Hardware

These straps are cut from first quality harness leather, back or center stock only. All rivets solid copper, hand set with burrs. Snaps and buckles solid steel drop forgings tested to 1500 lbs., galvanized finish. Straps may be lengthened or shortened by adjusting buckle.



No. 5251

CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
KL-5251	1 $\frac{3}{4}$ in. x 5 ft. 8 in. "Klein-Lok" Snaps. Leather wear pad at buckle	32 $\frac{1}{2}$ lbs.
5251	1 $\frac{3}{4}$ in. x 5 ft. 8 in. Standard Snaps. Leather wear pad at buckle	32 $\frac{1}{2}$ lbs.



No. 5250

CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
KL-5250	1 $\frac{3}{4}$ in. x 5 ft. 8 in. "Klein-Lok" Snaps. Stainless Clips	32 $\frac{1}{2}$ lbs.
5250	1 $\frac{3}{4}$ in. x 5 ft. 8 in. Standard Snaps. Stainless Clips	32 $\frac{1}{2}$ lbs.

KLEIN'S LEATHER EXTENSION STRAPS



No. 5215

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5215	1 $\frac{3}{4}$ in. x 15 in. Forged "D" Ring	15 $\frac{1}{2}$ lbs.

These extension straps are worn permanently attached to one "D" ring on body belt. They are brought into use when a large pole

makes it necessary to "extend" the regular safety strap.

All leather furnished natural color.

" E V E R Y L I N E M A N A K L E I N M A N "



KLEIN'S LEATHER SAFETY STRAPS—2" WIDE



No. 5253

These straps are cut from first quality harness leather, back or center stock only. All

safety clips riveted through double thickness of the leather.

CAT. No. SIZE AND DESCRIPTION

KL-5253	2 in. x 5 ft. 8 in.	"Klein-Lok" Snaps.	Stainless Clips	AV. WEIGHT PER DOZ.
5253	2 in. x 5 ft. 8 in.	Standard Snaps.	Stainless Clips	40 lbs.

The 5253 series can be furnished to order with leather wear pad at buckle instead of stainless steel clip. Order as KL-5253-T or 5253-T.



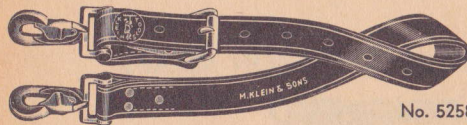
No. 5257-S and L

This strap is similar to the No. 5253 but has a double tongue buckle. First quality and selection harness leather cut strictly from center or back stock only. Securely sewed with linen thread, hot waxed, lock stitched.

Solid copper rivets and burrs set by hand. Snaps and buckle are solid steel drop forgings individually tested to 1500 lbs. They are made in our own shops and are galvanized to prevent rust. The strap may be lengthened or shortened by adjusting buckle. One end reinforced with stainless steel safety clip. The single end is returned through roller of snap and securely sewed and riveted.

CAT. No. SIZE AND DESCRIPTION

5257-S	2 in. x 5 ft. 1 1/2 in.	"Bell System" type.	Drop Forged Roller Snaps	AV. WEIGHT PER DOZ.
5257-L	2 in. x 5 ft. 10 in.	"Bell System" type.	Drop Forged Roller Snaps	39 lbs.



No. 5258

This strap is a heavy duty type following the N.E.L.A. specifications. First quality and selection harness leather throughout, cut from center or back stock only. Sewing is

with linen thread, hot waxed, lock stitched. Solid copper rivets with burrs hand set. Snaps and buckle are solid steel drop forgings tested to 1500 lbs. They are made in our own shops and galvanized to prevent rust. The strap may be lengthened or shortened by adjusting the buckle. Reinforcing at buckle end with stainless steel safety clip, at the fixed snap the strap is returned and secured by sewing and riveting.

CAT. No. SIZE AND DESCRIPTION

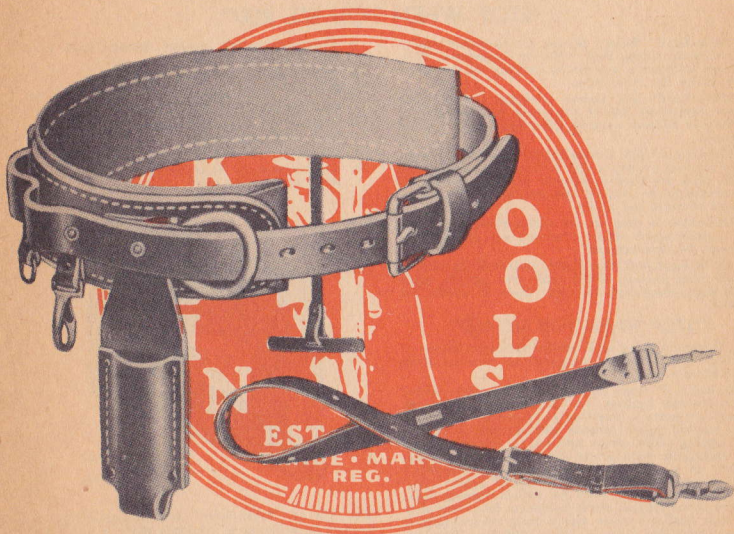
KL-5258	2 in. x 5 ft. 6 in.	"Klein-Lok" Snaps.	Stainless Clip	AV. WEIGHT PER DOZ.
5258	2 in. x 5 ft. 6 in.	Standard Snaps.	Stainless Clip	40 lbs.

"EVERY LINEMAN A KLEINMAN"

"KLEIN-KORD"* FABRIC

(*Trade-mark Registered)

Pat. No. 2152943



Klein's Fabric Belts and "Klein-Kord"* Safety Straps! On tower work especially and for rugged strength always "Klein-Kord" is the answer.

In "Klein-Kord" Safety Straps, the "Red Center" provides unmistakable warning of wear—no more guessing.

*Trade-mark Registered U. S. Pat. Off.

"STOP WHEN YOU SEE **RED**"

" E V E R Y L I N E M A N A K L E I N M A N "



KLEIN-KORD

(Trade-mark Reg. U. S. Pat. Off. Pat. No. 2152943)

The RED CENTER Fabric
for Linemen's Safety Straps

"STOP WHEN YOU SEE RED"

"Klein-Kord" Safety Straps are standard equipment with leading Public Utility Companies, Telephone Companies and others desiring the maximum of safety for their men.

"Klein-Kord" Red Center provides for the first time something Safety Engineers have sought for years—a definite warning when to discard a safety strap.

"Klein-Kord" Red Center fabric is made of a number of plies of long staple cotton of special weave. The plies are bonded together with frictioning and vulcanizing—a construction which provides maximum strength and safety.

Red rubber is used on the center plies to provide an unmistakable signal when the use of the strap should be discontinued.

The "Klein-Kord" Red Center Safety Strap may be used with perfect safety until two outside plies are worn completely through. Then (it speaks for itself)

"STOP WHEN YOU SEE RED"

At this point there still remains an ample factor of safety—but it is good judgment to take the strap out of service.

"Klein-Kord" must not be confused with rubber transmission belting. In "Klein-Kord" the cross cords are extra strength so as to permit the use of the tongue type of buckle without risk of slitting or ripping under severe tension. (A friction buckle is unsuitable on a safety strap because the possibility of slip makes it decidedly objectionable.) When tested as in use a "Klein-Kord" Safety Strap will take a load of 2400 lbs. before ripping takes place at the tongue, which compares favorably with a high quality leather safety strap where ripping would probably occur at about 1750 lbs. The tensile strength per square inch of "Klein-Kord" is 5660 lbs. as against the usual specifications for first quality harness leather of 3500 lbs. In order to overcome any tendency to stretch, a leather strap 2 inches wide is frequently used. With "Klein-Kord" there is no appreciable permanent stretch, and we have found that a width of 1 3/4 inches provides a full factor of safety. For extra long wear all "Klein-Kord" safety straps are fitted with stainless steel reinforcements at buckle and fixed snap. We unhesitatingly recommend "Klein-Kord" Safety Straps to our many friends.

ADVANTAGES

1. Guess work as to safe period of use eliminated.
2. Great tensile strength. Factor of safety—plus.
3. Weatherproof.



CAT. No.

K.K.D.-025 1/4 pint can 4 lbs. 11 oz.

"KLEIN-KORD" DRESSING

AV. WEIGHT PER DOZ.

4. Extremely tough; resists damage from accidental cuts, heat, etc.
5. Uniformity of thickness and strength.
6. Safety Straps can be made any length required.
7. Low conductivity. Flexible.
8. Permits use of regular tongue buckle for positive length adjustment.
9. No stretch in use.
10. Can be used for all purposes. On poles, towers or tree trimming work.



Cross Section
of "KLEIN-KORD"
Trade-mark
Reg. U. S. Pat. Off.

The life of "Klein-Kord" will be materially increased by dressing at intervals with "Klein-Kord" dressing. The first dressing should be applied as soon as the original rubber finish is worn from the surfaces—the fabric is then exposed so that it will absorb the dressing. Brush in a liberal first coat and allow to soak in and dry at room temperature for about an hour. Then apply a lighter second coat and do not use strap until thoroughly dry. This treatment will protect the fabric and provide a "slick" surface which in use will slide over the pole freely.

Use special dressing only. Ordinary varnishes or lacquers are not satisfactory and may ruin your strap.

For the convenience of our customers we furnish "Klein-Kord" dressing in 1/4 pint cans, with full directions for use as follows:

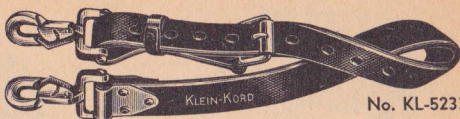
" EVERY LINEMAN A KLEINMAN "



KLEIN'S "KLEIN-KORD" SAFETY STRAPS—RED CENTER

Furnished with "Klein-Lok" Snaps, as shown (No. KL-5233), or with Standard Snaps (No. 5233).

To avoid substitutes see that every strap has our registered trade name, "KLEIN-KORD," molded into the surface.



No. KL-5233

CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
5233	1 3/4 in. x 5 ft. 8 in. Standard Snaps. Stainless Clips	36 lbs.
5233-7	1 3/4 in. x 7 ft. Standard Snaps. Stainless Clips	40 lbs.
KL-5233	1 3/4 in. x 5 ft. 8 in. "Klein-Lok" Snaps. Stainless Clips	36 lbs.
KL-5233-7	1 3/4 in. x 7 ft. "Klein-Lok" Snaps. Stainless Clips	40 lbs.
5234	1 3/4 in. x 56 in. (Fixed Length) Standard Snaps	
KL-5234	1 3/4 in. x 56 in. (Fixed Length) "Klein Lok" Snaps	

(Other lengths can be furnished to order.)

"KLEIN-KORD" NYLON SAFETY STRAPS--RED CENTER

Klein-Kord Nylon offers the desired flexibility in a fabric safety strap. The smooth surface gives long service, wears evenly, and does not require dressing or treatment.

Made of multiple plies of strong, finely woven Nylon, bonded together with frictioning and vulcanized in neoprene, the famous Klein Red Center provides an



No. KL-5294

unmistakable signal before wear reaches the danger point. "Stop when you see the Red."

CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
5294	1 3/4 in. x 5 ft. 8 in. Standard Snaps. Stainless Clips	34 lbs.
KL-5294	1 3/4 in. x 5 ft. 8 in. "Klein-Lok" Snaps. Stainless Clips	34 lbs.
5294-7	1 3/4 in. x 7 ft. Standard Snaps. Stainless Clips	38 lbs.
KL-5294-7	1 3/4 in. x 7 ft. "Klein-Lok" Snaps. Stainless Clips	38 lbs.

(Other lengths can be furnished to order.)

KLEIN'S "KLEIN-KORD" EXTENSION STRAPS

The Extension Strap is used in connection with a fixed length Safety Strap. It provides the extra length necessary when working on large diameter poles. May be worn on belt ready for immediate use or carried in truck.



No. 5236

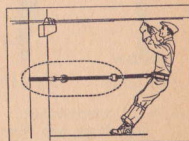
CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
KL-5236	1 3/4 in. x 15 in. with Standard "D" and "Klein-Lok" Snap	16 1/2 lbs.
5236	1 3/4 in. x 15 in. with Standard "D" and Standard Snap	16 1/2 lbs.

KLEIN'S "KLEIN-KORD" DIVING BOARD STRAP

The diving board strap is used with a regular safety strap (see illustration at right) to give the workman additional reach—with complete safety—when working from diving board or platform. Fitted with two standard "D" rings—one fixed and one adjustable to fit pole diameter—and with a standard snap.



No. 5238

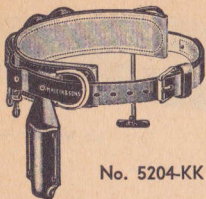


CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
5238	1 3/4 in. x 7 ft. with Standard "D" and Standard Snap	39 lbs.
KL-5238	1 3/4 in. x 7 ft. with Standard "D" and Klein Lock Snap	39 lbs.

"EVERY LINEMAN A KLEINMAN"



"KLEIN-KORD" TOOL BELT NYLON TREE TRIMMERS BELT



No. 5204-KK

The proved dependability of "Klein-Kord" Safety Straps has led to the development and introduction of the new "Klein-Kord" Tool Belt. This new belt is made of multi-ply "Klein-Kord," a material that is absolutely uniform in quality and possesses great strength and flexibility.

The No. 5204-KK Belt is fitted with a "Klein-Kord" plier pocket, knife snap, tape thong, glove pouch loop, and lag wrench keeper.

No. 5204-KK "Klein-Kord" Tool Belt is made in 36, 38, 40, 42, 44 and 46-inch sizes. (See Table, Page 43.)



No. 5210

This harness is made of multiple-ply Nylon bonded in neoprene and will stand 250 lb. on a 5 ft. drop. Weight of wearer is distributed along the leg straps as well as the body strap. The safety line is attached to a floating Dee ring at the front. Drop forged hardware with solid copper rivets and equipped with harness snap. Adjustable for sizes from 36" to 44".

CAT. No.		AV. WEIGHT PER DOZ.
5204-KK	With Standard "D" Rings. Width 4"	45 lbs.
5204-KK-L	Latigo Leather Lined	45 lbs.
5210	Nylon Tree Trimmers Belt	48 lbs.

KLEIN'S BELT ACCESSORIES

Tape-Thong Knife Snap Ring



No. 5130



No. 5131



No. 5132

The Tape-thong provides a convenient arrangement for carrying a roll of tape. The thong is pliable latigo leather 10 inches long x $\frac{3}{8}$ inches wide, slit to form loops at both ends. One end is looped to a fiber cross bar $3\frac{1}{2}$ inches long. The other loop may be attached readily to the belt.

The Knife Snap and ring are both mounted on harness leather straps and come with rivets and burrs ready for attaching to belt.

CAT. No.	DESCRIPTION	AV. WEIGHT PER DOZ.
5130	Tape-thong with fiber cross bar	$\frac{1}{2}$ lb.
5131	Knife Snap with strap and rivets	$1\frac{1}{2}$ lbs.
5132	Ring with strap and rivets	$\frac{1}{2}$ lb.



KLEIN'S CANVAS "TOOL-PACK"

Every mechanic will recognize the advantages of the "Tool Pack." It is a sturdy, brown, canvas bag, approximately 6" x 12". A heavy zipper instantly opens or closes the full length mouth. Just the thing to keep a selection of frequently used small tools separated where they can be found at once—no "digging" around in the big bag. Plenty of room for pliers, small screwdriver, drill, wrenches, etc. You'll wonder how you got along without it.

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5139	6 in. x 12 in.	3 lbs.



No. 5139

KNIFE POCKET

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5163	3"x9"	4 lbs.

This harness leather pouch is made specially for the No. 1560-3 Skinning Knife. It can be carried in the hip pocket or riveted to belt as preferred. Lock stitched with genuine hot waxed linen thread. An opening at bottom of the pouch prevents accumulation of water or dirt. This pouch provides a safe method for carrying a useful knife. (For Knife see page 74.)

No. 5163



HIP POCKET TOOL CASE

DETACHABLE HOLSTER

No. 5111



CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5111	5 in. x 7 in.	5 1/2 lbs.

For carrying pliers or other tools in hip pocket. Prevents cutting of clothes, or possible injury to the person. Made of harness leather.

All leather furnished natural color.

No. 5116



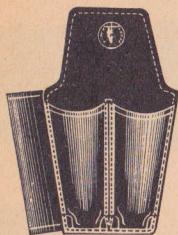
CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5116	10 in. long	6 lbs.

Made of heavy harness leather with loop to slip over belt. Carries 6, 7, 8, or 9 inch side cutting pliers. Mouth of pocket framed to hold open position permanently.

"EVERY LINEMAN A KLEINMAN"



COMBINATION TOOL POCKETS



No. 5118-PRS

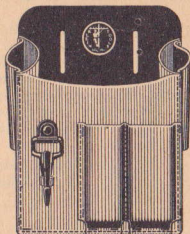
An all-purpose pouch for pliers, folding rule and screw driver. Openings at bottom. Top of double thickness to permit riveting to belt. Size over-all: 8¾ inches high, maximum width 6½ inches.

CAT. No. OVERALL SIZE

5118-PRS 6½ "x8¾"

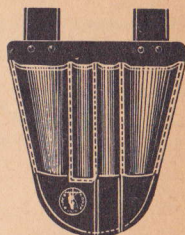
5125 7" x9"

5126 6½ " x8½"



No. 5126

A new Klein Quality pocket designed especially for electricians. Has large utility pocket, two plier pockets, two screw driver pockets and handy knife snap. Size over-all: 8½ inches high; maximum width, 6½ inches.



No. 5125

Wiremen's tool holder. This four-pocket tool holder is of heavy harness leather with riveted straps for tool belt. An extra long pocket 6½ inches deep is provided for screw driver.

AV. WEIGHT PER DOZ.

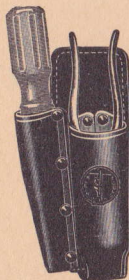
8 lbs.

7½ lbs.

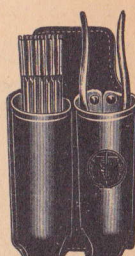
7½ lbs.



5118-K



5118-S



5118-R

CAT. No. SIZE AND DESCRIPTION

5118-K 4¾ "x8" For Plier and Knife

5118-S 4" x8" For Plier and Screw Driver

5118-R 4¾ "x8" For Plier and 6 ft. Rule

AV. WEIGHT PER DOZ.

7½ lbs.

5½ lbs.

7½ lbs.

These pockets are made of heavy harness leather. Opening at bottom prevents accumulation of dirt or water. Top flap of double

thickness leather for riveting to belt. (The plier compartment fits 6, 7, 8, and 9 inch side cutting plier.)

All leather furnished natural color.

" EVERY LINEMAN A KLEINMAN "



PLIER POCKETS



No. 5107

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5107	3½ in. x 8½ in.	3 lbs.

Made of a good quality leather. For carrying 6, 7, 8, or 9 inch pliers when at work. Has slits through which belt may be inserted or can be riveted on.

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5112	3½ in. x 9 in.	4¾ lbs.

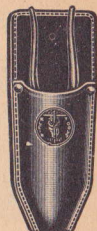
Similar to No. 5107 except plier does not protrude. Bottom is left open to prevent collection of dirt, etc. A loop is riveted at back through which belt may be passed or can be riveted on.

CAT. No.	OVERALL SIZE	AV. WEIGHT PER DOZ.
5128-P	3 in. x 8½ in.	5 lbs.

Catalog Number 5128-P. A handy plier pocket made of harness and latigo leather, riveted and sewed construction. Bottom of pocket is open to prevent accumulation of dirt or water. Punched at the top to permit lacing to belt.



No. 5128-P



No. 5112

POUCH FOR RUBBER GLOVES

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5120-9	7½ in. x 9 in. deep	4½ lbs.

Scotch chrome leather pocket for carrying rubber gloves (folded). Comes equipped with snap and "D" ring, ready to attach to body belt.

CAT. No.	SIZE	AV. WEIGHT PER DOZ.
5120-15	7½ in. x 15 in. deep	7 lbs.

Same as above but larger to accommodate gloves without folding.



No. 5120-9

KLEIN'S UTILITY POUCH

Catalog Number 5140-K. Klein utility pouch. Large, roomy pouch—front and back of harness leather, gussets of soft latigo leather. Useful for holding variety of tools, bolts, nuts, etc. Attaches to lineman's belt with latigo leather thongs. Pouch expands to 6½ in. x 6½ in. x 3¾ inches.

CAT. No.	OVERALL SIZE	AV. WEIGHT PER DOZ.
5140-K	7 in. x 9 in.	10½ lbs.



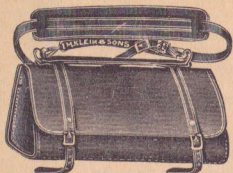
No. 5140-K

All leather furnished natural color.

" EVERY LINEMAN A KLEINMAN "



INSPECTOR'S HARNESS LEATHER TOOL BAG



No. 5108

CAT. No.	SIZE	AV. WEIGHT EACH
5108-14	14x8 inches	5 lbs.
5108-16	16x8 inches	5 3/4 lbs.
5108-18	18x8 inches	6 lbs.
5108-20	20x8 inches	6 1/2 lbs.
5108-22	22x8 inches	7 lbs.
5108-24	24x8 inches	7 1/4 lbs.

This bag offers a combination of good features. It is made of harness leather and will stand rough and hard usage and still always look well. It has a shoulder strap combined with a pad and hand strap. The bottom is three ply and is protected with steel studs. Retaining straps pass clear around the bag so that it may be loaded to the limit of its capacity and be securely held intact. All seams are sewed with hot waxed linen thread, lock stitched. The leather used does not absorb moisture.

LINEMEN'S CANVAS TOOL BAG, LEATHER BOTTOM

These bags are made of one piece of white duck reinforced all around the bottom with heavy bag leather, 3 3/4 inches up on the 5102 series, 8 inches up on the 5105 series. The bottom is made of heavy leather outside and duck inside, lock stitched all around. The bottom is protected with strong steel studs.

Bottoms and sides are joined together with lock stitched leather welt seams. Mouth of the bag is formed by a 12-gauge steel frame; the canvas is clinched between this frame and an inside secondary steel frame. Has harness leather handles and two retaining straps with buckles.



No. 5102

CAT. No.	SIZE	AV. WEIGHT EACH
5102-12	12-inch	2 1/4 lbs.
5102-14	14-inch	2 1/2 lbs.
5102-16	16-inch	3 lbs.
5102-18	18-inch	3 1/4 lbs.
5102-20	20-inch	3 1/2 lbs.
5102-22	22-inch	3 3/4 lbs.
5102-24	24-inch	4 lbs.



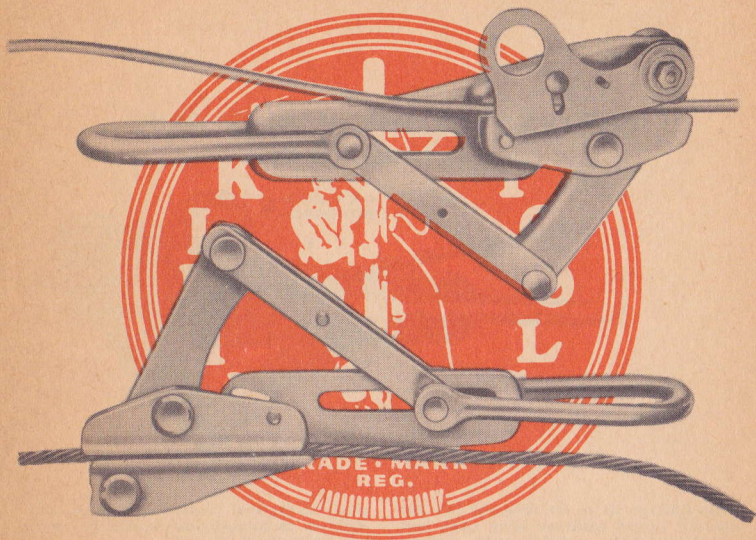
No. 5105

CAT. No.	SIZE	AV. WEIGHT EACH
5105-16	16-inch	3 lbs.
5105-18	18-inch	3 1/2 lbs.
5105-20	20-inch	3 3/4 lbs.
5105-22	22-inch	4 lbs.
5105-24	24-inch	4 1/4 lbs.

The above bags can be furnished with lock and key, also shoulder strap to order at slight additional cost.

"EVERY LINEMAN A KLEINMAN"

KLEIN'S "CHICAGO" GRIPS



Construction engineers are more and more demanding grips which will neither slip nor damage the conductor or strand under heavy loads. These requirements have been met by welding a lining of bronze into the jaws of standard "Chicago" Grips.

To insure maximum efficiency and avoid slippage, keep the grooves of jaws of "Chicago" Grips free of grease, oil, accumulation of spelter, etc. (Use emery paper or fine cut file if necessary.)

Main body piece and lever are forged steel. Draw parts are of wrought steel. Rivets are machine turned and workmanship throughout is first class.

To Decide on Size Grip Required

Consult reference tables in the back of this

catalog giving diameters of solid wires and also copper and aluminum strands in general use. For your convenience there is also a table giving decimal equivalents of fractions. (Page 76.)

If you cannot decide on grip for your purpose send us full particulars with outside diameter of wire or strand and we will advise promptly.

Once these grips seize the wire they hold on with the tenacity of a bull dog. The harder the pull, the tighter the hold. Pulls straight without leaving kinks in the wire. Handy to put on and holds in place by means of a spring acting on the compressing lever.

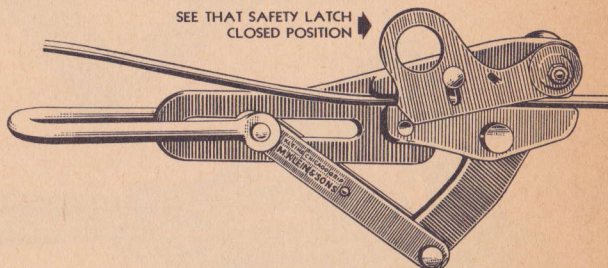
In the following listings Grips with bronze lined jaws are indicated by the letter "B" after the catalog number. (Thus 1628-5B.)

"EVERY LINEMAN A KLEINMAN"



KLEIN'S IMPROVED "CHICAGO" GRIPS

FOR HOT OR DEAD LINE WORK



These Chicago Grips are ideal for hot line jobs. All forged parts are alloy steel, heat treated for toughness and strength. Galvanized finished, bronze lined fixed jaw.

To apply, use any convenient stick—hang grip on hook through eye in the self-closing safety latch. In this position the grip balances perfectly with jaws horizontal. The weight of the grip holds the safety latch open, and entry of the conductor into the jaws of the grip is unobstructed.

When the stick is removed, the safety latch closes automatically, holding the grip se-

curely on the line. It cannot fall accidentally. Grip can be applied close to pole and easily slid out required distance.

It is not necessary to hold grip in position while initial strain is applied, and when the load is released, it can be pulled back to the pole rapidly.

The leverage principle employed is correct. It gives maximum efficiency in proportion to the diameters of conductors on which the tool is used. "The harder the pull the tighter the hold."

CAT. No.	MAXIMUM CONDUCTOR	MINIMUM CONDUCTOR	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH
1628-3 BH	1/0 B&S Strand (.373)	10 B&S Solid (.102)	.44"	4500 lbs.	3 1/4 lbs.
1628-5 BH	4/0 B&S Strand (.522)	4 B&S Solid (.204)	.58"	8000 lbs.	6 1/4 lbs.

Above grips can be furnished with spring by prefixing catalog number with S, as S-1628-3BH.

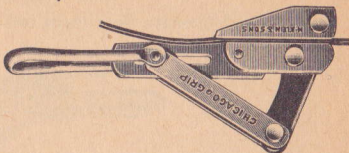
" EVERY LINEMAN A KLEINMAN "



KLEIN'S "CHICAGO" GRIPS FOR BARE WIRES

(Solid and Strand)

The 1613 series is constructed as described on page 59, with the plain type of jaw as suited for bare wire.



CAT. No.	MAXIMUM WIRE SIZE	MINIMUM WIRE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH	SIZE No.
1613-30	No. 6 B. & S. Solid (.162")	No. 12 B. & S. Solid (.081")	.22 in.	1,500 lbs.	1 1/2 lbs.	1
1613-30B	As above but bronze lined jaws.					
1613-40	No. 0 B. & S. Strand (.373")	No. 10 B. & S. Solid (.102")	.44 in.	2,250 lbs.	3 lbs.	2
1613-40H	As above but with safety latch as shown on hot line grip page 60.					
1613-40B	Same as 1613-40 but with bronze lined jaws.					
(1613-40, 1613-40B supersede previous Nos. 1613-40A and 1613-40AB.)						
*1613-50	No. 4/O B. & S. Strand (.552")	No. 6 B. & S. Solid (.162")	.62 in.	4,000 lbs.	8 lbs.	3A
1613-50B	As above but bronze lined jaws.					

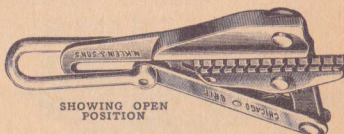
Bronze lining of jaws prevents slippage and consequent surface abrasion of conductor or strand.

*Former Nos. 1613-50A and 1613-50AB obsolete. Substitute 1613-50 and 1613-50B.

KLEIN'S "CHICAGO" GRIPS FOR INSULATED WIRE

With "Saw Tooth" Upper Jaw

The 1611 series is similar to the 1613 series in construction but the necessary extra width in the jaws is "lipped" out to avoid unnecessary weight. The upper jaw has "saw-tooth" gripping notches.



SHOWING OPEN POSITION

CAT. No.	MAXIMUM WIRE SIZE	MINIMUM WIRE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH	SIZE No.
1611-20	No. 4 B. & S. Weatherproof Solid (.391")	No. 10 B. & S. Weatherproof Solid (.250")	.50 in.	2,200 lbs.	3 lbs.	6
1611-30	No. 1 B. & S. Weatherproof Solid (.500")	No. 6 B. & S. Weatherproof Solid (.313")	.56 in.	3,500 lbs.	3 3/4 lbs.	4
1611-40	No. 2/0 B. & S. Weatherproof Strand (.672")	No. 1 B. & S. Weatherproof Solid (.500")	.75 in.	3,750 lbs.	7 3/4 lbs.	5
1611-50	No. 4/0 B. & S. Weatherproof Strand (.860")	No. 2/0 B. & S. Weatherproof Strand (.672")	.94 in.	3,750 lbs.	7 3/4 lbs.	5A

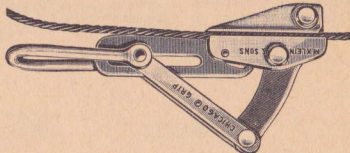
The 1611-20 and 1611-30 Grips can be furnished with bronze lined jaws to special order. (Order as 1611-20B, 1611-30B, etc. In such cases, however, the jaws will be smooth—not "saw-tooth" type.) Prices on application.



KLEIN'S IMPROVED "CHICAGO" GRIP

THE "ALL PURPOSE" TOOL

For Messenger, Guy Strand and Conductors up to 1/2 in. Diameter



No. 1628-5B

CAT. No.	MAXIMUM CABLE SIZE	MINIMUM CABLE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH
1628-5B	With bronze lined jaws 4/0 B. & S. 7 Strand Copper (.522") 3/0 A.C.S.R. (.502")	No. 4 B. & S. Solid Copper (.204") No. 6 A.C.S.R. (.198")	.58 in.	8,000 lbs.	6 lbs.

1628-5 As above but without bronze lining in jaws.

1628-5H As above but with safety latch as shown on hot line grip page 60.

The above grip has been designed to provide in one tool a grip to handle almost every requirement on the usual job.

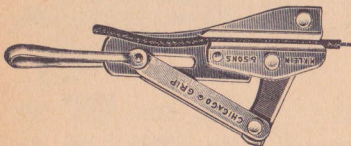
The jaws have been lengthened and the leverage increased. No. 1628-5B has bronze-lined jaws to prevent slippage and conse-

quent damage to galvanized finish or to copper or aluminum conductors.

For "all purposes" on any strand or solid wire up to 1/2 inch diameter with load up to 8000 lbs. Weighs only 6 lbs.

Forged from Alloy Steel—heat treated.

KLEIN'S "CHICAGO" GRIPS FOR STRANDED CONDUCTORS



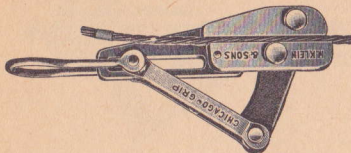
The 1626 series is similar to the 1613 series construction but the necessary extra width in the jaws is "lipped" out to avoid unnecessary weight. Both gripping jaws are smooth.

CAT. No.	MAXIMUM CABLE SIZE	MINIMUM CABLE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH
1626-39	336,000 C.M. A.C.S.R. (.741") 400,000 C.M. Copper (.728")	3/0 A.C.S.R. (.502") 4/0 Copper Strand (.522")	.75 in.	3,750 lbs.	7 1/2 lbs.
*1626-39B	As above but bronze lined jaws.				
1626-40	500,000 C.M. A.C.S.R. (.904") 600,000 C.M. Copper (.891")	397,500 C.M. A.C.S.R. (.783") 450,000 C.M. Copper (.770")	.94 in.	3,750 lbs.	7 1/2 lbs.
*1626-40B	As above but bronze lined jaws.				
*1626-AB	Furnished to order. Forged from Alloy Steel—Heat Treated Bronze-lined jaws.				
	336,000 C.M. A.C.S.R. (.741") 400,000 C.M. Copper (.728")	3/0 A.C.S.R. (.502") 4/0 Copper Strand (.522")	.75 in.	8,000 lbs.	7 1/2 lbs.

*Bronze lining of jaws prevents slippage and consequent surface abrasion of cable.



KLEIN'S "CHICAGO" GRIPS FOR MESSENGER AND GUY STRAND, HEAVY CABLES, WIRE ROPE, ETC.



CAT. No.	MAXIMUM CABLE SIZE	MINIMUM CABLE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH
1628-6	7/16" Galvanized Steel Strand (.438") No. 2/0 B. & S. Copper Strd. (.414") No. 1/0 A.C.S.R. (.398")	3/16" Galvanized Steel Strd. (.188") No. 5 B. & S. Copper Solid (.182") No. 7 A.C.S.R. (.177")	.50 in.	8,000 lbs.	8 1/2 lbs.
1628-6B	As above but bronze lined jaws for stranded conductors.				
1628-16	5/16" Galvanized Steel Strand (.625") No. 300,000 C.M. Copper Strd. (.629") No. 4/0 A.C.S.R. (.563")	5/16" Galvanized Steel Strd. (.312") No. 1/0 B. & S. Copper Solid (.325") No. 2 A.C.S.R. (.316")	.69 in.	15,000 lbs.	15 1/2 lbs.
1628-16B	As above but bronze lined jaws for stranded conductors.				
★ 1628-16BP	As 1628-16 but jaws extra width and bronze lined—for larger cables.				
	No. 550,000 C.M. Copper Strd. (.853") No. 477,000 C.M. A.C.S.R. (.883")	No. 1/0 B. & S. Copper Solid (.325") No. 2 A.C.S.R. (.316")	1.06 in.	15,000 lbs.	17 lbs.

★ **For use on copper or aluminum conductors or wire rope we hold stock of parts and finish jaw slots to fit diameter desired. The range of conductor sizes is given for general information. It is not practical to include a number of diameters in one grip.**

Bronze lining of jaws prevents slippage and consequent surface abrasion of strand.

Orders must specify outside diameter of cable.

These grips successfully fill a long felt want taking the heavy loads incident to larger strands without injury to the strand itself. Forged from alloy steel heat treated. Gripping jaws are machined smooth. Rivets are

machine turned and workmanship throughout is first class.

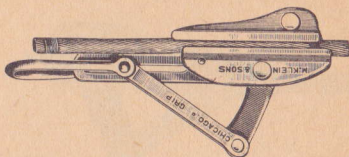
These grips frequently can be modified to accommodate cables of larger diameters. Write us on your special requirements.

Whether used on solid or strand (galvanized, copper or aluminum) it is always important to keep the jaws of grips clean and free from any grease, accumulation of spelter, other metal or foreign substance, which may be deposited in the grooves. This will prevent slippage and insure full efficiency.



KLEIN'S "CHICAGO" GRIP

For Hollow Core and other large diameter Conductors and Cables



CAT. No.	MAXIMUM CABLE SIZE	MINIMUM CABLE SIZE	APPROX. MAX. OPENING	SAFE LOAD	APPROX. WEIGHT EACH
*1628-30B	1,000,000 C.M. Hollow Con- ductor (1.257")	350,000 C.M. Hollow Con- ductor (1.00")	1.35 in.	20,000 lbs.	28 lbs.
	1,250,000 C.M. Copper Strand (1.288")	550,000 C.M. Copper Strand (.853")			
	1,033,500 C.M. A.C.S.R. (1.246")	477,000 C.M. A.C.S.R. (.883")			
*1628-40B	1,250,000 C.M. Hollow Con- ductor (1.430")	1,000,000 C.M. Hollow Con- ductor (1.257")	1.60 in.	25,000 lbs.	32 lbs.
	1,750,000 C.M. Copper Strand (1.525")	1,250,000 C.M. Copper Strand (1.288")			
	1,590,000 C.M. A.C.S.R. (1.545")	1,033,500 C.M. A.C.S.R. (1.246")			

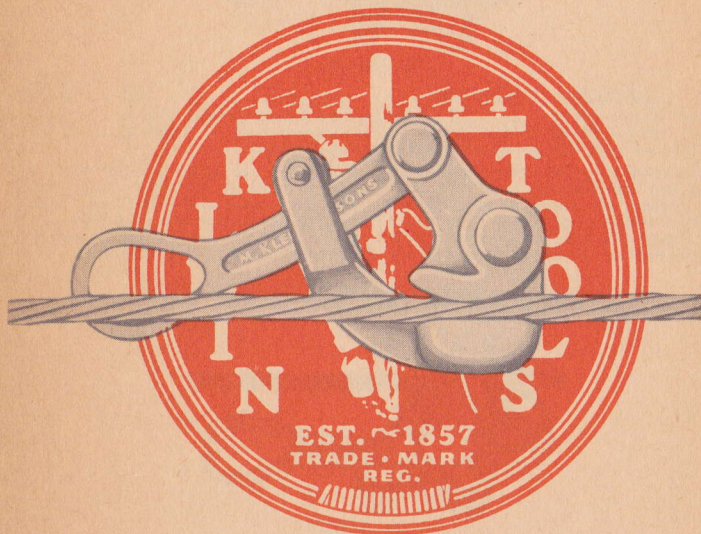
Bronze lining of jaws prevents slippage and consequent surface abrasion of conductor.

In the case of hollow conductors and other large diameter cables the jaws of the grip must be shaped to provide maximum enclosure and contact with the circumference of the cable itself. When so made the grip will function at maximum efficiency. Slippage is

prevented and danger of crushing or collapsing hollow conductors is avoided. For these reasons we hold the grips in blank and finish as necessary for any particular requirement. These Grips are forged from alloy steel—heat treated. The jaws are bronze lined.

*The range of conductor sizes is given for general information. It is not practical to include a number of diameters in one grip. Orders must specify exact outside diameter of cable.

KLEIN'S "HAVEN'S" GRIPS



The simple sturdy construction of Klein's "Haven's" Grips, together with their positive and almost automatic action, maintains their popularity year after year.

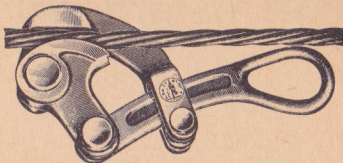
While the use of a Haven's Grip is not

recommended on conductors or strand if the slight marking from the eccentric is objectionable, there are nevertheless many applications where the Haven's Grip will be preferred to any other.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S "HAVEN'S" STEEL GRIPS



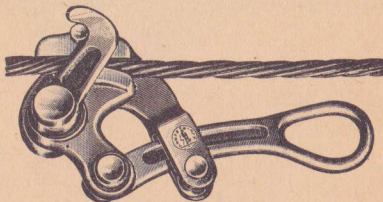
No. 1604-20

CAT. No.	APPROXIMATE MAX. OPENING	APPROXIMATE MIN. OPENING	DESCRIPTION	SAFE LOAD	APPROX. WEIGHT PER DOZ.
1604-10	15/64 in. (.24 in.)	1/16 in. (.06 in.)	For No. 4 B & S wire and smaller	2500 lbs.	12 lbs.
1604-20	17/32 in. (.53 in.)	9/64 in. (.14 in.)	For 1/2 in. wire and smaller	5000 lbs.	30 lbs.
1604-20L	(Same as 1604-20, but with swing latch as supplied on 1625-20.)				

These popular grips have been improved in design and materials. All parts solid steel drop forgings, heat treated as necessary for maximum strength and service. The eye is pear shaped ($7/8$ inch and $1\frac{1}{8}$ inch wide respectively) and a roller fitted to the body

yoke makes the motion free and allows the load to come on smoothly. Instantaneous hold, yet a shake on the tackle rope releases the grip. These grips will not slip due to the hand cut serration in the face of the eccentric. Galvanized finish (except eccentric).

KLEIN'S IMPROVED "HAVEN'S" GRIP



No. 1625-20

CAT. No.	APPROXIMATE MAX. OPENING	APPROXIMATE MIN. OPENING	DESCRIPTION	SAFE LOAD	APPROX. WEIGHT PER DOZ.
1625-20	25/32 in. (.78 in.)	7/32 in. (.22 in.)	For wires $3/4$ in. to No. 2 B & S Can be modified to order for $7/8$ " cable.	8000 lbs.	42 lbs.

This grip is another improved design. All the desirable features have been retained, but by the use of alloy steel drop forgings properly heat treated the weight has been reduced over forty per cent at the same time the safe load rating has been increased sixty per cent. Suitable for use on solid or strand wires. The swing latch engages stud on the lower jaw preventing any distortion of the body or cross bolt under load. This grip is a favorite for use on trolley wire and weatherproof. It can be readily adapted at

slight extra cost for hot line work on weatherproof (insulated) conductors. The swing latch holds the tool on the line in position for the pull.

The handle or draw piece works smoothly against steel roller set in yoke of body arm. The eye is pear shaped $1\frac{1}{4}$ inch wide, permitting use of oversized sister hook on the tackle. Hand cut serration in face of eccentric assures a hold that cannot slip. Almost automatic in action. Galvanized finish (except eccentric).

Tackles and Hand Lines

KLEIN'S HOWES WIRE TOOLS

The swivel hook is forged steel with an opening large enough to go 'round an insulator pin or other convenient object. The shank of hook is lengthened out so as to reach under D. P. insulator when necessary. The forward end has a locking device to hold the load at any distance.



No. 1702

It is arranged so that a grip can be attached. All metal parts are galvanized finish.

CAT. No.

SIZE

WEIGHT EACH

1702-20 Single purchase. Strap 1 1/4-inch wide, 7 ft. long 2 1/2 lbs.

KLEIN'S "CHICAGO" LINEMEN'S TOOL

This set is a combination of "Chicago" Grip No. 1613-30 with Howes Wire Tool No. 1702-20. It is largely used by telephone companies. Detailed description of Grip and Wire Tool are given under their individual catalog numbers.



No. 1700-30

Other sizes of grips can be furnished in this combination to order only.

CAT. No.

WEIGHT EACH

1700-30 For No. 6 wire and smaller down to No. 13 4 lbs.

KLEIN'S SELF-LUBRICATING HEAVY BLOCK TACKLES

Consists of two special double sheave blocks. The spring guarded snap hooks and eye are drop forgings. The side plates are wrought. Pulleys are bronze bushed and self lubricating. Galvanized finish. The rope used is best quality obtainable, spliced to eye of block with galvanized thimble.



No. 1802

CAT. No.

WEIGHT EACH

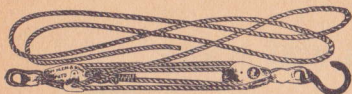
1802-40	Furnished with 30 ft. of 1/2-in. rope	15 1/2 lbs.
1802-50	As above with 5/8-in. rope	17 3/4 lbs.
1802-60	As above with 3/4-in. rope	19 1/2 lbs.

Other lengths of rope furnished to order.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S SELF-LOCKING BLOCK TACKLE



No. 1802

Consist of light steel shell blocks galvanized, fitted with a snubbing hook to lock load in any position. This is a great convenience and time-saver for the man on the pole. Also in

handling a vertical load. To lock the load, simply pull the luff rope under the hook. To release, simply pull the rope. The blocks are arranged with spring guard snap hooks. When pulling up wire to make a splice it may be used with two grips attached to the snaps, or with drop forged hook No. 258 or No. 259 to anchor to an insulator-pin or other convenient anchorage. (These hooks are specially shaped to fit under D. P. insulator on cross arm.) The rope is best quality obtainable. (Shipped un-assembled.)

CAT. No.

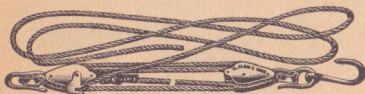
1802-30 Furnished with 25 ft. $\frac{3}{8}$ -in. rope and detachable anchor hook No. 258 3 lbs.

1802-30S Furnished with 25 ft. $\frac{3}{8}$ -in. rope and detachable swivel anchor hook No. 259 3 lbs.

WEIGHT EACH

KLEIN'S SELF-LOCKING BLOCK TACKLE

(With Guarded Snaps)



No. H-1802

The No. H-1802-30 set of blocks is identical with the No. 1802-30 set described above except that the snaps are "guarded." To accomplish this feature the nose of each hook has been lengthened to extend over the latch or keeper. This does away with any necessity of taping the snaps after come-a-long has been engaged. (Shipped un-assembled.)

CAT. No.

H1802-30 Furnished with 25 ft. $\frac{3}{8}$ -in. rope and detachable anchor hook No. 258 $3\frac{1}{2}$ lbs.

H1802-30S Furnished with 25 ft. $\frac{3}{8}$ -in. rope and detachable swivel anchor hook No. 259 $3\frac{1}{2}$ lbs.

WEIGHT EACH

KLEIN'S HAND LINE

With Drop Forged Snap Hook No. 443-A



No. 1803

These lines are designed for maximum safety and service. The rope is best quality obtainable. Spliced to eye of snap hook with galvanized steel thimble. The snap hook is drop forged and similar to those used on safety straps except that it has round eye. It opens to $\frac{3}{4}$ inch.

Can be furnished with any different length of rope to order.

(For details of snap see page 69.)

CAT. No.

1803-60 With 75 ft. $\frac{3}{8}$ -in. rope and No. 443-A Snap $3\frac{1}{2}$ lbs.

1803-120 As above with 120 ft. of rope and No. 443-A Snap $5\frac{1}{4}$ lbs.

1804-60 With 75 ft. $\frac{3}{8}$ -in. rope and No. 470 Swivel Snap $3\frac{1}{2}$ lbs.

1804-120 As above with 120 ft. of rope and No. 470 Swivel Snap $5\frac{1}{4}$ lbs.

WEIGHT EACH

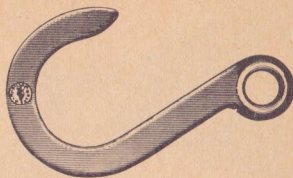
" EVERY LINEMAN A KLEINMAN "



KLEIN'S ANCHOR HOOK FOR TACKLES

This hook is a solid steel drop forging. It is approximately $5\frac{1}{2}$ inches overall length x $3\frac{3}{4}$ inches across the hook. The eye has an inside diameter of $\frac{5}{8}$ inch to engage with snap on Klein Tackles 1802-30 and H1802-30, shown on page 68. Galvanized finish.

Specially shaped to slip under D. P. insulator and engage insulator pin on cross arm.



No. 258

CAT. No.

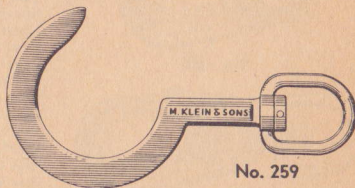
258 Drop Forged Hook. 2 in. Opening. $\frac{5}{8}$ in eye 4 lbs.

AV. WEIGHT PER DOZ.

KLEIN'S SWIVEL ANCHOR HOOK FOR TACKLES

This hook is also a solid drop forging. It is $6\frac{1}{2}$ inches long and $3\frac{3}{4}$ inches across the hook. Swivel clevis will engage readily with snap on Klein Tackles 1802-30 and H-1802-30. The swivel relieves trouble from twisting and kinking of the rope when used on a slack line. Galvanized finish.

Specially shaped to slip under D. P. insulator and engage insulator pin on cross arm.



No. 259

CAT. No.

259 Drop Forged Hook with Swivel Clevis $4\frac{1}{2}$ lbs.

AV. WEIGHT PER DOZ.

KLEIN'S SNAP FOR HAND LINES AND LIGHT HOISTS

This snap is used on hand lines, 1803 series. (See page 68.) It will be found a real convenience for many uses. Can be used on all light hoisting—for roofers, etc. Galvanized Finish. The hook and eye are an integral drop forging. Duck bill nose closes around latch. Safe load up to 2000 lbs.

The opening will take up to $\frac{3}{4}$ inch.

CAT. No.

443-A Forged Snap. Eye 1-1/16 in. I. D. Length overall $5\frac{1}{2}$ in. $6\frac{1}{2}$ lbs.

AV. WEIGHT PER DOZ.



No. 443-A

KLEIN'S SWIVEL SNAP FOR HAND LINES

This drop forged snap—with swivel clevis and quick-acting, plunger style latch—is designed to take $\frac{1}{2}$ -inch or lighter hand lines. Used on hand line 1804 series. Swivel action prevents accidental fouling into secondary wires. Safe load up to 500 lbs.

CAT. No.

470 Forged Snap with Swivel 3 lbs.

AV. WEIGHT PER DOZ.

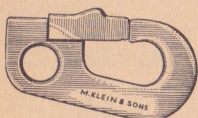
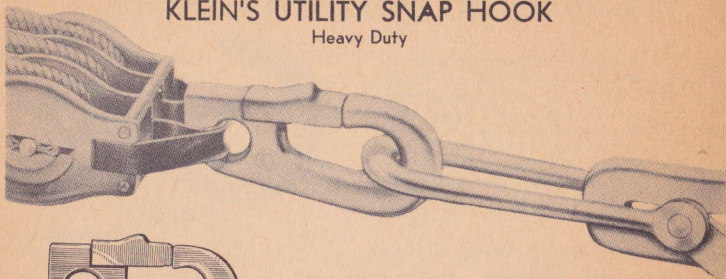


No. 470

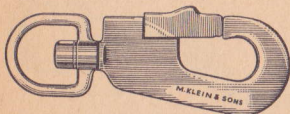


KLEIN'S UTILITY SNAP HOOK

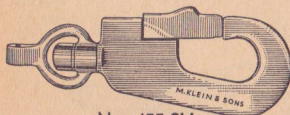
Heavy Duty



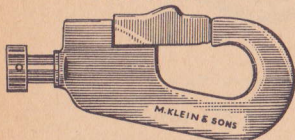
No. 455



No. 455-S



No. 455-SH



No. 455-SP

This new snap hook for blocks was designed to meet the demand of safety engineers and electricians for a hook that would not come loose on a slacked line—a hook that was easy to apply—one that was fool-proof and able to pull up a transformer or other heavy hand line loads.

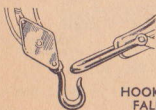
This new hook does away with the necessity of tapping or wiring the throat of the ordinary open hook and will quickly pay for itself in material and time saved. It also prevents the grip from slipping off and thus safeguards the groundman below.

The Klein Utility Snap Hook is drop forged steel, and will carry a working load of 8,000 pounds with an adequate safety factor. It snaps on with one hand and may be used on any conventional steel block 4 inches or smaller, or on pulling tackle or snatch blocks by simply replacing the open hook with the Klein Snap Hook.

Klein Utility Snap Hook No. 455 is furnished with eye 1-1/16" I. D. This hook can be furnished on special order with eye 1 1/4" I.D. for larger Blocks.

No. 455-S and No. 455-SH are furnished with swivel as shown.

CAT. No.		SAFE LOAD	LENGTH	WEIGHT EACH
455	with solid eye	8,000 lbs.	4 1/2 in.	1 lb.
455-S	with swivel eye	8,000 lbs.	7 1/2 in.	1 1/4 lb.
455-SH	with swivel eye	8,000 lbs.	7 1/2 in.	1 1/4 lb.
(For use with 3/4-ton hoists.)				
455-SH-3	with swivel eye	8,000 lbs.	7 1/2 in.	1 1/4 lb.
(For use with 1 1/2-ton hoists.)				
455-SP	with male fixture for hoists' swivel housing.			



HOOK CAN'T
FALL OFF



NO TAPE
NECESSARY



WON'T OPEN
UNDER HEAVY
LOAD

" EVERY LINEMAN A KLEINMAN "

KLEIN'S LINEMAN'S WRENCH

"Bell System" Type



CAT. No.	SIZE	AV. WEIGHT PER DOZ.
3146	13-inch, for $\frac{5}{8}$ in. hardware	23 lbs.

This wrench is forged of select bar steel, heat treated, and is of the open end type with two openings of different size at each end.

There is a hole provided at the larger end so that the wrench may be used for turning in standard pole steps.

This wrench is particularly adapted for use on the heavier 3-bolt guy clamps on which

the clearance for a wrench is limited and is generally suitable for $\frac{5}{8}$ inch hardware.

Openings:

Large end 1- $\frac{3}{32}$ inch and 29/32 inch

Small end 13/16 inch and 5/8 inch

(For $\frac{5}{8}$ inch through bolt, $\frac{1}{2}$ inch lag screw, $\frac{3}{8}$ inch carriage bolt, $\frac{1}{2}$ inch and $\frac{5}{8}$ inch guy clamps.)

KLEIN'S LINEMAN'S WRENCH



CAT. No.	SIZE	AV. WEIGHT PER DOZ.
3146-A	13-inch, for $\frac{3}{4}$ in. hardware	23 lbs.

Same as No. 3146 but modified for $\frac{3}{4}$ inch hardware.

Openings:

Large end 1 $\frac{1}{8}$ inch and 1 $\frac{3}{8}$ inch

Small end $\frac{5}{8}$ inch and $\frac{7}{8}$ inch

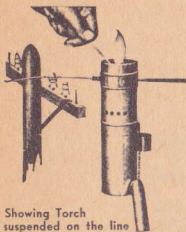
(For $\frac{3}{4}$ inch and $\frac{5}{8}$ inch through bolt, $\frac{1}{2}$ inch lag screw, $\frac{3}{8}$ inch carriage bolt, $\frac{1}{2}$ inch and $\frac{5}{8}$ inch guy clamps.)

"EVERY LINEMAN A KLEINMAN"

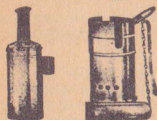


"STAYSALITE" LINEMEN'S TORCH

The "Staysalite" Torch has these main features:



Showing Torch
suspended on the line



Torch and Shield Detached

It "Staysalite" in a wind. It is light; it is small. It is lit and extinguished in a moment, as wanted. It burns alcohol without odor or noise. It has no adjusting parts, therefore it cannot get out of order. It is carried in the lineman's belt and does away with the ground man. It is hung directly on the wire under the joint to be soldered. It can be used as a small heater or soldering iron. It is provided with a cup for holding soldering paste.

This Torch is the invention of a practical, experienced telephone man. For hot work within the range of the light work of the telephone or telegraph lineman, house wireman and general shop man it is a boon.

To suspend the torch on a wire under a joint, place the wire in the slots on the upper edge of the rim, give the body of the torch a half turn and it's on; when through, give it a half turn in the opposite direction and it's off. Drop it back in your belt by means of the hook and you are free for the next thing in line. In general use by many of the largest utility corporations in the country.

CAT. No.

WEIGHT EACH

3420 1 1/4 lbs.



KLEIN'S "CHICAGO" FISH-TAPE PULLER

Patent No. 1,628,744

Here is a simple, husky come-along for Fish-Tape.

To engage puller on fish-tape place the tape sideways in slot and give puller a slight forward motion while pushing tape deeper into the slot. (This slips tape under the ratchet wheel.) Now pull. You have a positive grip on the tape. Slide forward on tape to position for new bite.

Klein's "Chicago" Fish-Tape Puller grips like a vise—never slips—simple, strong, automatic.

Does not injure the tape, 3 3/4 inches long, can be carried in the pocket.

Saves time and protects the hand.

(We do not supply Fish-Tape.)

CAT. No.

AV. WEIGHT PER DOZ.

1629 For Standard Fish Tapes 2 1/2 lbs.

1629-A Modified for No. 12 Iron Wire 2 1/2 lbs.



KLEIN-KOAT PLASTIC COVER FOR PLIER HANDLES

For those linemen and electricians who prefer the comfortable non-skid grip provided by plastic covers for plier handles, Klein offers the new Klein-Koat.

These covers are of transparent plastic in a bright maroon. To apply to plier handles, dip plastic grip into boiling water to within one inch of the closed end for 45 seconds; drive on plier handles. Their flexibility permits them to conform to the shape of the handle, assuring a tight fit. Eliminates practice of taping handles. Available in three sizes to fit 6 in., 7 in., 8 in. or 9 in. pliers.



CAT. No.	AV. WT. PER DOZ. PAIRS
60—to fit 6 in. pliers	1 lb.
70—to fit 7 in. pliers	1 1/4 lbs.
89—to fit 8 in. or 9 in. pliers	1 1/2 lbs.

KLEIN'S "XELA" ELECTRICIAN'S KNIFE

A Handy Combination for the Electrician.

The blades of this knife are made of high grade cutlery steel carefully tempered.

The locking feature on the screw-driver blade automatically locks the blade when open, yet a slight side pressure of the thumb releases the lock and permits the blade to be closed readily.



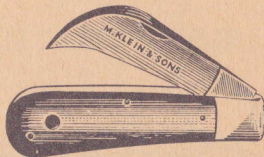
No. 1550-2

CAT. No.	AV. WEIGHT PER DOZ.
1550-2 Double Blade	2 lbs.

Fitted with wrought shackle, riveted in handle.

KLEIN'S "XELA" LINEMAN'S KNIFE

A sturdily constructed knife designed for long, hard service. The blade—3 inches long—is high grade, carefully tempered cutlery steel. Blade automatically locks in open position. Selected hardwood handle is rounded and swelled at end for firm, comfortable grip.



No. 1550-4

CAT. No.	SIZE AND DESCRIPTION	AV. WEIGHT PER DOZ.
1550-4	Single Blade, 4 inches (closed length)	2 3/4 lbs.

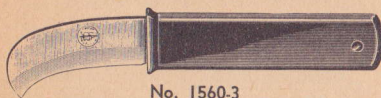
Fitted with wrought shackle, riveted in handle.

"EVERY LINEMAN A KLEINMAN"



KLEIN'S SKINNING KNIFE

(With Insulated Handle)



No. 1560-3

Here's a knife linemen have been looking for. The "half hard" rubber handle is molded on securely and provides adequate

CAT. No.

1560-3 Length overall 8 in. Blade 3 in.

insulation as well as a good generous grip. Shouldered out at the blade to prevent accidental cutting of glove or finger. The shape of the blade brings the point below the curve—a real safety feature. Back of blade ground flat for scraping. The hole in the handle is through the solid rubber. Forged from first quality cutlery steel individually tempered.

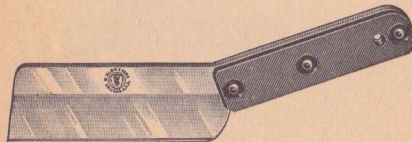
See also Knife Pocket No. 5163 made for this knife. (Page 55.)

AV. WEIGHT PER DOZ.

4 1/4 lbs.

KLEIN'S CABLE SHEATH SPLITTING KNIFE

Heavy Duty Type



No. 1515-1

Blade tempered and ground to keen edge. Has strong leather handle, securely riveted. Temper blued finish. A sturdy knife that will stand up to hard usage. Length over all 8 3/4 inches. Blade 4 1/2 inches.

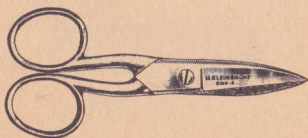
CAT. No.

1515-1

AV. WEIGHT PER DOZ.

13 lbs.

KLEIN'S "XELA" ELECTRICIAN'S SCISSORS



No. 2100-5

A scissor designed for the electrician and mechanic. Will stand continued hard service. Made of high-grade steel properly tempered. Has a screw hinge, allowing adjustment. Nickel plated finish.

CAT. No. SIZE

2100-5 5-inch

AV. WEIGHT PER DOZ.

2 lbs.

" EVERY LINEMAN A KLEINMAN "



KLEIN'S INSPECTORS' POCKET TOOL KIT

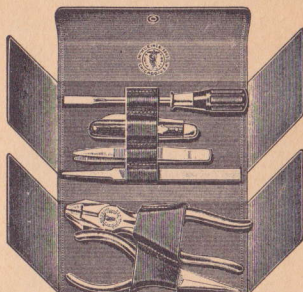
Solid black leather folding case strongly stitched, reinforced back. Fitted with one each of the following tools.

- 201-6 Side Cutting Plier.
- 301-6 Long Nose Plier.
- 1550-2 "Xela" Electrician's Knife.
- 1 Pair Electrician's Tweezers.
- 1 Special File.
- 1 Insulated Screwdriver.

A very handy assortment to fit the pocket.

Size closed $6\frac{1}{2}$ " x $3\frac{1}{2}$ " x $1\frac{1}{2}$ ".

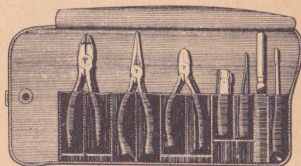
CAT. No. WEIGHT EACH
1305-2 $1\frac{1}{4}$ lbs.



No. 1305-2

KLEIN'S POCKET TOOL ROLL

Just the tool you want—right where you want it. This new handy kit designed for mechanics, service men, electricians or any man who is proud of good tools. Keratol Roll with strap and buckle. Size rolled 8" x $2\frac{1}{2}$ " diameter.



No. 1305-33A

Comprises the following:

- 1 No. 201-6 N.E. Side Cutting Plier
- 1 No. 301-6 Long Nose Plier
- 1 No. 202-5 Oblique Cutting Plier

- 1 No. 1550-2 Electrician's Knife
- 1 File
- 1 Pair Electrician's Tweezers
- 1 Insulated Screw Driver

CAT. No. WEIGHT EACH
1305-33-A $1\frac{1}{2}$ lbs.

" EVERY LINEMAN A KLEINMAN "



Comparative Sizes of Different Wire Gauges in Decimals of an Inch

No. of Wire Gauge	*American or Brown & Sharpe (B. & S.)	Birmingham or Eng. Wire (B.W.G.)	New British Standard (N.B.S.)
0000	.460	.454	.400
000	.40964	.425	.372
00	.3648	.380	.348
0	.32486	.340	.324
1	.2893	.300	.300
2	.25763	.284	.276
3	.22942	.259	.252
4	.20431	.238	.232
5	.18194	.220	.212
6	.16202	.203	.192
7	.14428	.180	.176
8	.12849	.165	.160
9	.11443	.148	.144
10	.10189	.134	.128
11	.090742	.120	.116
12	.080808	.109	.104
13	.071961	.095	.092
14	.064084	.083	.080
15	.057068	.072	.072
16	.05082	.065	.064
17	.045257	.058	.056
18	.040303	.049	.048
19	.03589	.042	.040
20	.031961	.035	.036
21	.028462	.032	.032
22	.025347	.028	.028
23	.022571	.025	.024
24	.0201	.022	.022
25	.0179	.020	.020
26	.01594	.018	.018
27	.014195	.016	.0164
28	.012641	.014	.0148
29	.011257	.013	.0136
30	.010025	.012	.0124
31	.008928	.010	.0116
32	.00795	.009	.0108
33	.00708	.008	.010
34	.006304	.007	.0092
35	.005614	.005	.0084
36	.005	.004	.0076
37	.004453
38	.003965
39	.003531
40	.003144

*The American (B. & S.) gauge is generally used for solid wires of aluminum or copper.

The B.W.G. is generally used for steel and iron wire.

Decimal Equivalents of Fractions of an Inch

8ths	
1/8	.125
1/4	.250
3/8	.375
1/2	.500
5/8	.625
3/4	.750
7/8	.875
16ths	
1/16	.0625
3/16	.1875
5/16	.3125
7/16	.4375
9/16	.5625
11/16	.6875
13/16	.8125
15/16	.9375
32ds	
1/32	.03125
3/32	.09375
5/32	.15625
7/32	.21875
9/32	.28125
11/32	.34375
13/32	.40625
15/32	.46875
17/32	.53125
19/32	.59375
21/32	.65625
23/32	.71875
25/32	.78125
27/32	.84375
29/32	.90625
31/32	.96875
64ths	
1/64	.015625
3/64	.046875
5/64	.078125
7/64	.109375
9/64	.140625
11/64	.171875
13/64	.203125
15/64	.234375
17/64	.265625
19/64	.296875
21/64	.328125
23/64	.359375
25/64	.390625
27/64	.421875
29/64	.453125
31/64	.484375
33/64	.515625
35/64	.546875
37/64	.578125
39/64	.609375
41/64	.640625
43/64	.671875
45/64	.703125
47/64	.734375
49/64	.765625
51/64	.796875
53/64	.828125
55/64	.859375
57/64	.890625
59/64	.921875
61/64	.953125
63/64	.984375



Diameters, stranding and ultimate strength of A.C.S.R. and All Aluminum bare cables

Cable Size	A. C. S. R.			ALL ALUMINUM		
	Number of Alum. & Steel Strands	Diameter Inches	Ultimate Strength in Pounds	Diameter Inches	Ultimate Strength in Pounds	Number of Strands
No. 8	6x1	.158	745			
7	6x1	.177	935			
6	6x1	.198	1170			
5	6x1	.223	1460			
4	6x1	.250	1830	.232	918	7
4	7x1	.257	2288			
3	6x1	.281	2250	.260	1135	7
2	6x1	.316	2790	.292	1405	7
2	7x1	.325	3535			
1	6x1	.355	3480	.328	1710	7
1/0	6x1	.398	4280	.368	2070	7
2/0	6x1	.447	5345	.414	2610	7
3/0	6x1	.502	6675	.464	3160	7
4/0	6x1	.563	8420	.522	3990	7
266800 C.M.	26x7	.642	11250	.586	5030	7
266800	6x7	.633	9645			
300000	30x7	.700	15430	.629	5890	19
300000	26x7	.680	12650			
336400	30x7	.741	17040	.666	6605	19
336400	26x7	.721	14050			
397500	30x7	.806	19880	.724	7650	19
397500	26x7	.783	16190			
477000	30x7	.883	23300	.793	8990	19
477000	26x7	.858	19430			
500000	30x7	.904	24400	.812	9425	19
556500	30x7	.953	27200	.856	10490	19
556500	26x7	.927	22400			
605000	26x7	.970	24100			
605000	54x7	.953	22500			
636000	30x19	1.019	31500	.918	12490	37
636000	26x7	.990	25000			
636000	54x7	.977	23600			
666600	54x7	1.000	24500			
715500	30x19	1.081	34600	.974	14050	37
715500	26x7	1.051	28100			
715500	54x7	1.036	26300			
750000				.997	14430	37
795000	30x19	1.140	38400	1.026	15300	37
795000	26x7	1.108	31200			
795000	54x7	1.093	28500			
874500	54x7	1.146	31400	1.077	16480	37
900000	54x7	1.162	32300			
954000	54x7	1.196	34200	1.124	17980	37
1033500	54x7	1.246	37100	1.170	19480	37
1113000	54x19	1.293	40200	1.216	21850	61
1192500	54x19	1.338	43100	1.250	23400	61
1272000	54x19	1.382	44800	1.300	24500	61
1351500	54x19	1.424	47600	1.340	26000	61
1431000	54x19	1.465	50400	1.379	27000	61
1510500	54x19	1.506	53200			
1515000				1.417	28500	61
1590000	54x19	1.545	56000	1.454	30000	61
80000	8x1	.367	5200			
101800	12x7	.461	9860			
110800	12x7	.481	10730			
134600	12x7	.530	12920			
159000	12x7	.576	15200			
176900	12x7	.607	16440			
190800	12x7	.631	17730			
211300	12x7	.663	19640			
203200	16x19	.714	27500			
203000	8x7	.584	11140			

The above information is from data published by Aluminum Company of America. For diameters of weather proof cables see tables published by the manufacturer



Diameter and Minimum Breaking Strength of Hard Drawn Copper Wire and Concentric Stranded Cable

Size	Solid Wire Diam. M. B. S. Lbs.	3-Wire Strand Diam. M. B. S. Lbs.	7-Wire Strand Diam. M. B. S. Lbs.	12-Wire Strand Diam. M. B. S. Lbs.	19-Wire Strand Diam. M. B. S. Lbs.	Anaconda Hollow Conductor Diam. M. B. S. Lbs.		
14 A.W.G.	.064	214						
	.072	268						
	.081	337						
	.091	423						
	.102	529						
9	.114	661						
8	.128	826	.146	777				
7	.144	1030	.164	977				
6	.162	1280	.184	1228				
5	.181	1591	.206	1542				
4	.204	1970	.232	1938				
3	.229	2439	.260	2433				
2	.258	3003	.320	2913				
1	.289	3688	.360	3620	.332	3898		
0	.325	4517	.368	4750	.373	4899		
00	.365	5519	.414	5927	.419	6153		
000	.410	6722	.464	7366	.470	7698		
0000	.460	8143	.522	9154	.528	9617		
250 M.C.M.		37-Wire Strand						
		.575	11560		.600	11130	.750	10600
	300		.630	13870	.657	13170	.766	12700
	350		.681	16060	.710	15140	1.000	15320
	400		.728	18320	.766	17560	1.000	17150
	450		.772	20450	.811	19750	1.000	18770
500		.813	22510		.811	21950	1.004	22400
550		.853	24760	61-Wire Strand		1.008	24470	
600		.891	27020	.893	27530	1.027	26470	
650		.928	29130	.929	29770	1.106	28530	
700		.963	31170	.964	31820	1.230	30500	
750		.997	33400	.998	34090	1.092	32500	
800		1.029	35120	1.031	35960	1.269	34960	
900		1.082	39510	1.084	40520	1.261	38920	
1000		1.151	43830	1.152	45030	1.237	44440	
1250				91-Wire Strand				
				1.288	55670	1.430	26530**	
	1500			1.411	65840	1.645	31860**	
	1750			1.526	77930	1.843	33440**	
	2000			1.630	87790	2.018	35300**	

*These are typical designs of Anaconda I-Beam Hollow Conductor. Many others of varying physical characteristics and size are available.

**Large sizes of Hollow Conductors are usually made of annealed wires.

This table furnished by courtesy of Anaconda Wire & Cable Company.



T. B. Insulated and U. R. C. Weatherproof Conductors Outside Diameters and Minimum Breaking Strength

A.W.G. SIZE	COPPER (Solid)		COPPER (7 wire strand)	
	O.D. INCHES	M.B.S. LBS.	O.D. INCHES	M.B.S. LBS.
0000	.782 (25/32)	8143	.860 (55/64)	9154
000	.735 (47/64)	6722	.797 (51/64)	7366
00	.609 (39/64)	5519	.672 (43/64)	5927
0	.563 (9/16)	4517	.609 (39/64)	4750
1	.500 (1 2)	3688	.547 (35/64)	3804
2	.469 (15/32)	3003	.516 (33/64)	3045
3	.422 (27/64)	2439	.469 (15/32)	2433
4	.391 (25/64)	1970	.438 (7/16)	1938
6	.313 (5/16)	1280	.344 (11/32)	1228
8	.281 (9/32)	826	.281 (9/32)	777
10	.250 (1 4)	529		
12	.219 (7/32)	337		
14	.188 (3/16)	214		

Galvanized Steel Strand Outside Diameters and Minimum Breaking Strength

O.D. INCHES	STANDARD M.B.S. LBS.	SIEMENS MARTIN M.B.S. LBS.	HIGH	EXTRA HIGH
			STRENGTH M.B.S. LBS.	STRENGTH M.B.S. LBS.
5/8	11600	19100	29600	42400
1/2	7400	12100	18800	26900
7/16	5700	9350	14500	20800
3/8	4250	6950	10800	15400
5/16	3200	5350	8000	11200
1/4	1900	4250	4750	6650
3/16	1150	3150	2850	3990
5/32	870	1900		

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USEFUL INFORMATION

To find the circumference of a circle, multiply the diameter by 3.1416.

To find the diameter of a circle, multiply the circumference by .31831.

To find the area of a circle, multiply the square of the diameter by .7854.

To find the surface of a ball (sphere), multiply the square of the diameter by 3.1416.

To find the cubic inches (volume) in a ball, multiply the cube of the diameter by .5236.

Doubling the diameter of a pipe increases its capacity four times.

The radius of a circle x 6.283185 equals the circumference.

The square of the circumference of a circle x .07958 equals the area.

Half the circumference of a circle x half its diameter equals the area.

The circumference of a circle x .159155 equals the radius.

The square root of the area of a circle x .56419 equals the radius.

The square root of the area of a circle x 1.12838 equals the diameter.

To find the area of a square or the section of a flat bar, or of a rectangle, multiply the width by the thickness. In a square these dimensions are the same.

To find the area of an octagon, multiply the square of the diameter of the inscribed circle by .828.

To find the area of a regular hexagon, multiply the square of the diameter of the inscribed circle by .866.

To find the area of a triangle, multiply the width of the base by one-half of the perpendicular height.



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1901-M, 1901-M-ADJ, C-1901-M-ADJ.....	35	5238	53
1901-MG	42	5249	43
1903, 1903-ADJ, C-1903-ADJ	36	KL-5250, 5250	49
1907, 1907-ADJ, C-1907-ADJ	36	KL-5251, 5251	49
1939, 1939-ADJ, C-1939-ADJ	35	KL-5253, 5253	50
1945, 1945-ADJ, C-1945-ADJ	34	KL-5253-T, 5253-T	50
1945-G	42	5257-S, 5257-L	50
2100-5	74	KL-5258, 5258	50
3146, 3146-A	71	KL-5294, 5294, KL-5294-7, 5294-7	53
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5107	57	5301-9, 5301-10	40
5108-14 to 5108-24	58	5301-11, 5301-12, 5301-13	39
5111	55	5301-14, 5301-15, 5301-16	40
5112	57	5301-18, 5301-19, 5301-20	39
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5118-K, 5118-S, 5118-R, 5118-PRS	56	8200 to 8206	41
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5125	56	K.K.D.-025	52
5128-P	57	N.O. 1, N.O. 2, N.O. 4.....	38
5130	54		



CLIMBERS FOR LINEMEN

1. To be sure that you have climbers that fit you, bend your knee and measure the distance from the projecting knee bone to the arch of the shoe sole at the instep; then subtract one-half inch.
2. Be sure that climber gaffs are sharp at all times. Give them the "Ring Test." If they give off a dull sound, replace them promptly.
3. Treat the straps occasionally with neat's-foot oil to keep them soft and pliable. Inspect the straps for safe condition each time before using. Do not punch extra holes in the straps—it may weaken them.
4. Do not allow climbers to lie around where they may be stumbled over or where they may be damaged by being stepped on.
5. Avoid weather checks, knots, shakes, rot and hard places in poles, which are likely to cause cut-outs. Use extra precaution when climbing in icy weather.
6. Be sure not to spur or drag the gaff over the safety strap of a fellow worker, when passing him on the pole.
7. Only wear climbers when working on poles—never while doing ground work, climbing ladders or riding in vehicles.

LINEMEN'S LEATHER BELTS AND STRAPS

1. *Personally* inspect your safety belt and strap every day before using.
2. Discard at once all cut or damaged belts and straps.
3. Never weaken strap or belt by punching extra holes.
4. Belts and straps should never be dropped or thrown from a pole.
5. Never throw a belt or strap over a steam coil or radiator to dry.
6. Wipe the belt or strap off with a clean cloth and apply a light dressing of neat's-foot oil. Then dry it at room temperature.
7. Keep safety belts and straps out of the reach of blow torches.
8. Store belts and straps in special compartments, or hang them securely in the truck.
9. Do not depend on the "bend test" to determine the strength of the belt and strap.
10. Inspect, wash and oil your safety belt and strap at least every 90 days.

(Information from National Safety Council, Safety Instruction Cards Nos. 288 and 491)



PRONE PRESSURE ARTIFICIAL RESPIRATION

FIG. 1



If the person is not breathing, due to electric shock, drowning, inhalation of carbon monoxide gas, or injury, give artificial respiration, as follows:

1. Lay the patient on his stomach with one arm extended, the other bent at the elbow so that his face, turned outward, rests on his hand or forearm.
2. Kneel, straddling the patient's thighs so that you can assume the position shown in Fig. 1.
3. Place the palms of your hands on the small of the patient's back with your little fingers just touching the lowest rib.
4. With your arms straight, swing forward slowly so that the weight of your body is

FIG. 2



on the patient. See Fig. 2. This operation, which compresses the lungs, should take two seconds.

5. Immediately swing back to remove the pressure, thus allowing the lungs to expand. See Fig. 3.

6. After two seconds, swing forward again and repeat the entire procedure 12 to 15 times per minute.

7. As artificial respiration is in process, have someone loosen any tight clothing. Keep the patient warm and lying down. Do not give liquids by mouth until the patient is fully conscious.

8. If breathing should stop after it has once started, resume artificial respiration. Continue for several hours, if necessary.

9. To avoid strain on the heart, do not allow the patient to get up for awhile after he has regained consciousness.

FIG. 3



10. Do not remove the patient from the location of the accident before first aid is given, unless he is in a dangerous position. In breaking contacts with electrical equipment, protect yourself.

TAKE CARE OF YOUR EYES

Do not experiment with your eyes—consult a good physician. Cinders, sand and small objects may be usually removed by simple means. Do not rub the eye, which may cause the foreign object to scratch the eyeball and irritate the eyelids. By keeping the eye closed and still, tears will accumulate and often the particles will wash out of the eye without further treatment.

If the foreign matter is hidden from view under the upper or lower lids, a grain or two of whole flaxseed may be inserted in

the eye and then the lids closed. This procedure will often remove the particle.

Another method is to hold the upper lid away from the eye with the eyelashes, and at the same time, blowing the nose.

A third method is to invert the upper lid and pick out the substance with a clean cloth. *Do not leave the foreign matter in the eye for any length of time.* If you are unable to remove the foreign matter, go to the doctor immediately.

(Information from National Safety Council, Safety Instruction Card No. 165).

